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VOLUME 13

# IN THE SUPERIOR COURT,

State of California, County of Sacramento.

## OCTOBER SESSION, 1881.

HON. JACKSON TEMPLE, - - - - - - - PRESIDING JUDGE.

WINFIELD J. DAVIS, OFFICIAL REPORTER.

SAMUEL OSBOURNE AND WILLIAM M. CUTTER, REPORTERS.

**The People of the State of California,**
*vs.*
**The Gold Run Ditch and Mining Co.**

COUNSEL:

*For Plaintiff*,

HON. A. L. HART, Attorney General, GEORGE CADWALADER, ISAAC S. BELCHER, A. L. RHODES, RICHARD BAYNE.

*For Defendant*,

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In the Superior Court of the State of California in and for the County of Sacramento

The People of the State of California vs. The Soer Run Ditch and Mining Company } Afternoon Session Monday Dec. 5th 1881

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Winfield J. Davies
Official Reporter

Afternoon Session

Monday Dec. 5th/81

Direct Examination

of

Dwight D. Huntley

resumed

Mr. Cadwalader Have you Samples of material taken out of the Soet Run mine?

A I have

Q. Just refer to them, will you. You took them out yourself did you, on the occasion of your visit?

A I did. This is a sample of the sand that I referred to as being in lenticular masses in the bank (marked Huntley No. 1). This is a piece of pipe clay (marked Huntley No 2). This is a sample of the average bank (showing the remainder of contents of box)

Q. Take out a piece of it?

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A. Any one from looking at it, can see that it would be one piece, and some of it would be sand

2. Just take out a sample. (Huntley took out a piece which was marked Huntley No. 3)

2. What effect does exposure to air have upon the color of the materials of the main bank

A. The bank in general is a light bluish green, due to the presence of a protoxide of iron. The exposure to air, moist air, which carries oxygen, oxydises that, and the oxydised product, not protoxide of iron, but then sesquioxide of iron, is a red color. Hence that pipe clay after having been exposed to the air and in the water for a considerable time will be of a red color; not necessarily a dark red color, but a yellow to brown red color the same kind of color as the stickers seen in the river

3663

lower down

2. Just repeat that answer?

A. That pipe clay contains protoxide of iron. Protoxide of iron has various colors, but its general color is white to light green and light blue, or a light greenish blue color, it is generally considered. That by exposure to air, absorbes oxygen. If it is exposed simply to dry air, the effect is very slow; it does not change for years. According to a law of chemical reactions, when in solution, and the substance is divided very fine, so that atoms of one substance can come in contact with the atoms of the other it is oxydized and the protoxide of iron $-Fe_x'O_x'-$ is changed to the Sesquioxide $-Fe^2O^3-$ and the color of the sesquioxide is yellow brown to red. And hence the color of the clay is red, a pronounced color, a brownish red

3664

Q. How in regard to the main bank? A. This morning I spoke of the main gravel bank.

Q Yes the main gravel bank

A Theaction of air on the material of the main gravel bank, would have the same effect. Of course water could not penetrate the rock to change the entire rock, neither would it change the surface of the rock, because it be constantly worn off at the surface by the flood. But any substance that contained protoxide of iron would be apt to change to this brownish red color in a few months.

Q. Did you notice any alkali Mr. Belcher. Let him say what he noticed without your suggestions?

A I did not.

Q. I forgot to ask you this morning what is cement?

A. In a general sense?

3665 Q. In a hydraulic sense.

A. Hydraulic cement is a compound that will set under water; is chemically composed of silica and Alumina with varying proportions sometimes of one and sometimes of the other, of Magnesia & lime.

Q. Now is a hydraulic miners sense? A. In a hydraulic miners sense it is entirely different. It refers to the banks of soft conglomerate or gravel which are packed together, cohered, with considerable tenacity and are found in the beds of old rivers that are mined by hydraulic miners

Q. What is usually the cementing substance? A Yes The Court In the mines?

Mr. Cadwalader In that substance

The Court In the mines?

Mr. Cadwalader. Yes.

Witness. Silica. Sometimes, rarely, Oxide of Iron in the hydr-

drauli mines of California, limestone; sometimes sesquioxide of iron

2. I will ask you if you made an estimate of the amount of filling in the water channel of the North Fork? A. The amount of what?

2. The amount of the deposit in the North Fork?

A. I did not as regards to the cubic yards

2. I did not ask you in regard to the cubic yards but as to the extent of the deposit

A. I estimated that the bed of the stream was filled in that section I was speaking of this forenoon, from 5 to 20 feet deep

2. How did you arrive at that conclusion? A. In the river above the mouth of Canon Creek, the water marks can be seen 25 feet from the bed, showing that at flood time the water reaches to that height.

Taking into consideration the fact that the stream is wider ~~than~~ than that, sometimes below — and also it receives extra water from canons — assuming that 25 feet, when I would see water marks 10 feet above the present debris or sediment in the stream, I would assume that the sediment was 15 feet deep. In that way only I estimate that the sediment is from 5 to 10 feet deep. At one place in that section the bed rock was exposed. in very nearly the center of the stream. But it was not usual

2 It was not what?

A. It was not usual to find the bed rock. That was the only instance I remember.

2 What was about the slope of the banks?

A. Forty to forty degrees I should judge

2. In that section of the river did you find any

slickens? A. No; I think there were no slickens in that portion of the river

2. Did you notice any mica? A. No, I did not notice any.

2. Describe the character of the river for the first two miles below Rices' Bridge?

A. The upper portion of that 2 miles - perhaps half a mile - is similar to that above, that I have previously described. The lower portion, the lower mile and a half, is a narrow rocky gorge from 50 to 100 feet wide. The bed is full of large boulders, water worn boulders, and those show water marks; and the sides show water marks, sometimes 30, and in places where they are narrow 40 feet above the water

2. How is the grade?

A. It is pretty steep, although I could not tell how steep. The river is full of rifles

669

and small falls

2. Did you walk or ride that 2 mile section?

A. We had to walk that section, and at times climbed up the bank a good many feet

2. Is there any deposit there?

A. There is very little indeed; not worth mentioning

2. How high do the water marks show on the rocks?

A. Thirty to forty feet above the water, at the day we passed through it

2. How much water was there in this section, or what was the average depth of the water from Cañon Creek down to this point?

A. From Cañon Creek to this section?

2. Yes. A. We rode through the stream a great many times. The average depth might be a little less than a foot

8670

2. What was the character of the next 4 or 5 miles of the stream? A. The next 6 or 8 miles of the river would reach to nearly opposite the next hill on this bank (pointing to the map). It is about the only way I have to define it. It was about the same as the first section from Canon Creek down to Rices' Bridge. The width was about the same - 100 to 300 feet - and the deposits were about the same. Water marks were seen

2. What was the velocity of the water? A. About as fast as a horse could walk. You would have to hurry him up a little. Perhaps two and a half miles an hour. Over those cobbles it is difficult to walk

2. Did you see any thickens in that section?

A. There was some occasionally

2. How far sand?

A. There was more sand

than Chickens there

2. How does the debris in this section compare with that from Canon Creek down to Rices Bridge?

A. With the exception of their being a little more sand, and a little more clay to it, due to Chickens, it was about the same.

2. Did you notice any canons coming into the river on the left bank?

A. Yes. There were two

2. What canons were they?

A. Indian Canon and Shirt Tail Canon

2. What was coming out of them if anything?

A. There was a small stream of water coming out of Indian Canon, perhaps 50 inches. That was muddy. Out of Shirt Tail Canon there was some clear water - a little more.

2. Was there any deposit in the river bed, at the immediate mouths of these

3692

canons? A. Not any more than at any other part of the stream

2. What was the next section of the river that you examined?

A. The next section which was similar throughout I assume, is from the end of this last one, down to Lyons' Bridge, at the junction of the middle and north forks

2. How did you inspect that part of the river?

A. We did not know whether we could ride in the river or not, and for safety we rode along the ridge, riding out on spurs occasionally to see the bed of the river. We crossed the river at a truss bridge, a couple of miles above Lyons' Bridge, and in the remaining 2 miles were very near the bed of the stream

2. Did you see the whole of the river? A. Yes.

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Q. Did you see whether there were any obstructions in it to the flow of sedimentary matter? A. There had been one. There had been a Chinese dam a short distance above the truss bridge, but it had been partially swept away by the first rains. The water on both sides that was about the same height. An open gap could be seen through it. Otherwise there were no obstructions.

Q. How as to the deposit of sediment and sedimentary matter in this section as to width and height?

A. About the same as the preceding section. The width appeared to be about the same

Q. How as to thickens?

A. There seemed to be a little more color to the sediment; consequently more thickens

Q. To which bridge does

that bring you?

A. Lyons' Bridge is the end of that section

Q. How high is that bridge above the water?

A. Fifty-one feet above the water at the time of our visit-

Q. Did you see any water marks there, or anything to indicate a flood?

A. Yes, they were up on the banks very high. Perhaps - probably - the stream had been between 15 feet of the planking of the bridge

Q. How long was the bridge?

A. The bridge is 268 feet long.

Q. What does the next section of the river include?

A. The next section includes the north fork of the American River from that bridge to the dam of the North Fork Ditch Company, opposite Auburn. And this is the dam (pointing on map)

Q. What is the character of

the river bed and filling?

A. The river bed was not so wide as it had been, in places. I do not think it was 200 feet wide in that section. It was not filled so deep apparently.

Q. How as to bars?

A. There were some bars, on the bends of the stream particularly. The bars did not extend on both sides of the stream in all places, as we had seen it further up

Q. What is the nature of the river for 2½ miles below Auburn? A. I do not understand what distance of the river that is to include

Q. I mean opposite Auburn, or say, from the mouth of the middle fork down?

A. From the mouth down how far?

Q. Two and a half miles?

A. That is a little below the dam. Well that is what I have just stated. It was not

so wide as it had been previously. But there did not seem to be as much sediment in it. The dam set back about half a mile. We could not see what was in it

2. Did the dam have a discharge gate in it?

A. It had

2. What size was that?

A. Eight feet six inches from the top of the dam, I think it was about 4 feet by 6 or 4½ by 6

2. How is the crest of that dam protected, if at all?

A. It is protected by a bar of railroad iron.

2. Was it completed when you were there?

A. Not entirely. The gate was not completed.

2. Now go below 2½ miles. What is the nature of the river from the dam down?

A. The river is narrower. At times perhaps it is 75 feet

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wide; if I remember it was as narrow as that. At other places it was 150 or maybe 200 feet wide. There is some filling in it; the filling however, does not seem to be as great as in the upper portions. I have just mentioned. The size of the gravel and cobble does not seem to vary.

2. How is the grading of the river? A. I could not give the figures

2. I mean the grading? A. In that section of the river it is a pretty uniform grade. There are very few riffles there, not quite so much so as at the head

2. Any bed rock exposed? A. Yes. No! I will change that. I do not think there is any bed rock of consequence exposed in that 2½ miles

2. In regard to the size of the cobble stones down that far, how do they compare

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with those immediately below the mouth of Canon Creek? A. I do not think there is much difference. That is, the larger ones in each place, would be about the same size

Q. Do you know where Gwynn's Bridge is? A. Yes

Q. Take the river from the dam down to Gwynn's Bridge, how is it for bars?

A. There are some bars in it

Q. Where they generally located? A. They are located on the inside, on the concave side, of the river, at the bend of the stream

Q. Are there places where the bed is clean, the bed rock exposed, if so where?

Mr Belcher We object that these questions are entirely leading

Mr Cadwalader State what the character of the river bed is? A. The character of the

river bed is from 50 to 200 feet wide. In some places the bed rock can be seen. In some places there are bars. In some places there are small riffles or falls.

2. What is the apparent filling in that section?

A. Gravel, cobble

2. What is the apparent depth of the filling?

A. From 5 to 10 feet

2. How does it appear as to thickens? A. Some thickens are seen there

2. Did you see any signs there of bank mining in that section? A. I did not hear the question.

2. Did you see any appearance of bank mining there present or past?

A. Yes. Above Guynns' Bridge there are some bars that have been worked, some high bars on the river bank; not bars in the river, but bars on the bank proper,

7680

bars formed on the river ages ago, perhaps. Those have been worked away by hydraulicing or sluicing, I cannot say which. The larger mass of the cobbles, the large cobble particularly, have been piled up on the bed rock; the small have been washed off into the stream

2. Are you speaking of the bed rock of the channel of the stream, or the bed rock of the bars?

A. The bed rock of the bars, the high bars

2. The cobbles are there to be seen? A. Large amounts of them

2. About how large, should you say? A. Well there are places where the cobbles covered many acres. I could not give the number of acres. They were many feet thick, perhaps from 2 to 10 feet in places, sometimes less.

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Q. Did you see any mining going on in that section, and if so, what was its character? A. I did not see any mining going on. I saw some Chinese sluices and Chinese cabins

Q. How large were those sluices? A. 12 to 14 inches square

Q. What kind of mining was being done there?

A. Ground sluicing. There was no mining being done, but those sluices were for ground sluicing.

Q. They were not in operation?

A. They were not in operation

Q. Now take the next section down to Folsom?

Mr Belcher Down to what point? A. From Rattlesnake Bar down to Folsom. I would divide that into 2 sections, one reaching a short distance below Rattlesnake Bar; reaching to Doten's Bar, reaching 2½ miles. In that

first section there is sand and gravel; some slickens; some bars. The material is about the same size as formerly. Below that point at Dotens' Bar - down to Folsom, the gravel seems to be very scarce. There is very little large cobble, very little sand in fact. The bed of the stream is comparatively clean. The rocks appear very frequently. It is a rather narrow, clean, rocky, river bed

Q. How were the falls in that section of the river?

A. I could not give the grade of the river. About the same as formerly, I should judge

Q. Did you see any mining on that section of the river? A. I did not see any mines in operation

Q. Did you see any of these large sized cobbles lying on the bars?

Mr Belcher I wish you would

let him tell what he saw himself

Mr Cadwalader I will ask you in the first place if, in that section of the river you saw any mining going on? A. I did not

2. Did you see any signs of recent mining? If so, what were they?

A. Yes, there were signs of mining since the last flood- since last Winter - at 2 places near Folsom. They were small piles of debris, cobble and sand, which had been dumped into the stream from ground sluices on the sides. I did not see the mines; I saw the boxes, the exits, and the pile in the stream

2. How large were those piles? A. One pile was in the stream a short distance above the railroad bridge at Folsom. It did not reach clear across the stream so as to make the water level

6824

above it, higher than the water level below it. It was perhaps half an acre in area, perhaps less. The other one was on the opposite side of the stream, on the right bank of the river. Its debris did not reach into the stream but a little way. At high water there would have been some debris to wash away.

2. How did you pass through this section of the river? A. We passed through that section of the river on horseback. We did not ride in the bed of the stream, because it was exceedingly rocky. We rode from Folsom up the bed of the river a little way, and found it was impossible to get along, and climbed out on the bank and rode along, sometimes a mile from the stream, but returning to a point to which

6885

we could see, some point we had noted previously at our visit to the stream; then looking up the stream, again, and noting a point, and riding ahead again, as near as we could to the river, by roads, or trail, or open country, and so continued up the river. Twice, three times in that distance, we went down to the river. Perhaps 4 times; Three times I remember distinctly.

Q. Did you see any piles of cobbles on the highbanks or high bars? A. Where?

Q. In that section of the river? A. Yes. The same character of high bars, or bars on banks, continued below Rattlesnake Bar in some places, that there was above it

Q. Well how as to cobbles?

A. Well, there were some cobbles there too.

Q. How high were those bars?

A. Above the stream?

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2. Yes. A. They varied greatly. Beales' Bar, I believe, was about 190 feet above the stream. At Carleton the bar was about 70 feet

2. Did you notice the river at the bridge at Folsom?

A. I did

2. Do you know how wide it is, and how deep?

A. The water was 175 feet wide, and the depth varied from 3 to 13 feet

2. How did you ascertain that? A. We sounded it by dropping lines from the bridge

2. Did you determine the velocity of the water at that place? A. We did.

2. What was it?

A. About 7/10 of a foot per second

2. Did you determine the amount of water that was passing under the bridge?

A. It was estimated from that cross-section, and the velocity

Q. Estimated to be what?

A. About 700 cubic feet per second

Q. Did you make that estimate, or take part in making it?

A. I figured it over afterward, to see that it was according to the formula

Q. What was the formula?

A. The formula for the quantity of water is, Q. equals the area multiplied by the velocity

Q. Did you see any water marks on the bridge, to indicate its extreme height?

A. No. I could not say the extreme height. The banks have been washed away quite high, and would indicate that the flood has reached within 10 or 15 feet of the planks floor of the bridge

Q. What's the height of that?

A. The height of the bridge above the water is 45 feet

Q. I forgot to ask you one question. That was as to the amount of deposit at the

mouth of the South Fork?

A. At the mouth of the South Fork there is some sand on the right bank, coarse, gray sand, perhaps 50 feet, probably 50 feet, above the bed of the stream

Q. What is the character of the banks of the ~~stream~~ river at Folsom and vicinity, taking in the river bars that are there apparent?

A. The banks are about 50 feet in height, I should judge. Both sides of the stream below the bridge at Folsom and some distance below Folsom, have been old river bars, and are covered with, where they have been mined off, piles of cobble stones.

Q. How do those cobble stones that you find deposited on those bars, compare with the cobble stones in the river above?

A. I do not think they are similar to the cobble

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stones above. They are larger in size, they are of a slightly different color and material, although I could not give name to the material, by simply looking at them on a hasty trip.

Q. What is the extent of these deposits of cobble stones?

A. I could not say. There are very large deposits of cobble stones there, covering many acres.

Q. How do those bars show in regard to the work that has been performed upon them? That is, do they show the manner in which the work has been performed?

A. Yes. They indicate that it has not been performed by hydraulic process, or if it was by hydraulic process, it was on a very small scale with a very weak head of water, for the piles of cobble are level in places, and there are lines as if a plank

3690

had run there, showing that they have been thrown from a wheelbarrow, and wheeled into position, as I have frequently seen elsewhere.

Q. And the smaller ones?

A. There are no smaller cobbles in sight. They have probably been washed down. The force of the stream was sufficient to wash the smaller cobbles out of the way.

Q. I will ask you now how this description of what has been done in the way of mining on these bars, answers on all the bars on the river lower down? Mississippi Bar, Sacramento Bar, Sailors' Flat Bar and the others?

A. It is all about the same character on all those bars, as near as I could judge. I went down on the left bank of the stream; I did not visit Mississippi Bar, and those on the right bank, but I looked across, and would judge

it was the same

2. Was there any difficulty in seeing across?

A. There was none.

2. How wide was the river?

A. It varied from 400 to 700 feet, I would estimate

2. What do you say as to where the large cobble found in the river below Folsom came from?

A. I am inclined to believe that they came from those bars; did not come from up stream

2. What do you say about the sand and pebbles?

A. The sand and smaller pebbles? Some of it probably came from those bars; some of it probably came from up stream

Q Describe the next character of bars that you find in the river?

A Sand begins to increase. A sand in which there are thin layers of pebbles alternate, small strata of pebbles begins to be formed into bars Sometimes a whole bar will be of that material and sometimes part of it, the other part being gravel as before mentioned

Q What do you have to say as to the increase or decrease of the proportion of sand and pebbles as you leave Folsom?

A It increases considerably The sand increases considerably in the sedimentary filling in the river below Folsom. The proportion is greater than above

Q How about pebbles?

A They are much more

3693

abundant

Q What do you say about the width of the river bed for the first six or six miles above Folsom and the width of the water?

A The water is from about 100 to 200 feet wide I should judge

Q And the river bed?

A The river bed is 300 to 400 feet wide

Q What are the banks composed of? A Sand gravel and pebbles.

Q What kind of sand?

A Sometimes coarse, sometimes fine sand

Q What color?

A Sometimes grey sometimes yellow

Q Now as to gravel and cobbles deposited on the river sides?

A There are plenty of gravel and cobble stones in places in the banks

a few feet below the surface on the rivers sides

Q How do the banks slope there on the ~~riparian's~~ edge?

A The banks of the water stream slope gradually up to the banks of the river, the bed of the river in high water. They do not make V troughs but they slope up to an almost vertical bank of 8 or 10 and sometimes 20 feet

Q In this section of the river is there any mining or signs of mining?

A. Yes. ~~the~~ There are some small dumps from small sluices that run out into the bed of the stream; occasionally out into the water 100. 200 & 300 feet. The material is cobble and gravel. It is not in any large quantity, usually to forty feet wide.

Q. the dumps?

Ans, the dumps are not large; usually to forty feet wide and eight to ten feet high.

3695 Q Was there any mining going on there?

Ans. there was none at the time of my visit

Q. What kind of sluices ~~was there~~ were those?

Ans. They were small sluices: a foot or perhaps 15 inches square.

Q. ~~Wood~~?

Ans Wooden. Very rough: Very crude.

Q. Now take the river. from Buffalo Creek down:

Ans. From Buffalo creek down the river is in general wider. Sometimes it may be a thousand feet wide. The upper part of it has some bars of Cobble. but it in general the bars are of sand and slickens. the river flows on one side of the stream. the water flows on one side of the stream rather than in the centre. The bar will be on the other side. It flows close to the bank. and is wearing away the bank.

Q. Why?

Ans. Because the force of the Current tends to throw it against those banks, and the force of the Current tends to do that, because the bed is filling up and the banks are soft also. That it why it erodes.

Q. Is the river changing its bed.?

Ans It is.

3696

Q. Is there any thing hastening or retarding it?

Ans. Anything as mining ~~as mining~~. That would furnish material to settle in the bed of the stream would make it erode its banks.

Q. Let me ask you. Would that be because of the river filling up, or because of the sedimentary matter carried in the water? Which would be the cause of the river eroding the upper surface of its banks

Ans. The river would erode its banks because the current would be ~~broken~~ directly against it. The current would be directly against it; if it required a given space to pass through, and that space should be decreased. Now the grade of the river below Folsom: I judge from the absence of ripples, is quite light. Consequently the material brought down by a swifter current: according to the laws of running water: would be deposited where the velocity was checked. by the smaller grade. Consequently the size of the stream would be decreased: and consequently: to get an exit: the water must erode the banks.

Q. When you got down to Fords Bar what did you see of the river?

Ans. There is a large bar that is covered with cobble

3697

Q. are there any trees there?
Ans. Yes: there are trees on that bar.
Q. Apparently of what age?
Ans. I do not know. they are 12 or 15 inches in diameter. Oak trees grow slowly.
Q. What has become of the surface there?
A. The surface of that bar?
Q. Yes
Ans. That has been washed out.
Q By what?
A. By the stream.
Q Down to what?
Ans. It has been washed off. down to the underlying strata which is cobble and gravel. as I explained some time ago. these banks, worked, banks a few feet below the service ~~are com~~ ~~posed~~ are composed of cobble and gravel. It can be seen on the natural bank of the river.
Q. Did you see any water marks over this bar showing where the water had been: showing the height of the water over this bar?
Ans. Yes. At that place we saw sand deposited on the banks: and up on the ground that it is covered with bushes and leaves and grass. I think that is about the first place we began to see

3698

sand and sediment on the fertile soil
Q. Going down the river from Rantes — if you know the place — to Romneys: I will ask you if you noticed alfalfa fields
Ans. I did.
Q — Did you notice the depth of sand in any places?
Ans — At the place in an alfalfa field at Romneys house: there was sand. Coarse grey sand. twenty inches deep at least.
Q. Extending how far from the river?
A. I did not go to the river direct from that. I went in a diagonal line to the river from that.
Q. What is the height of the river bank there at Romneys
Ans — The height of the river bank at Romneys I could not say exactly. Along that section of the river it is 15 or 20 feet: from Rantes down to Romneys.
Q. What is it when you get down to Smiths gardens?
Ans — It was only 6 to 7 feet at Smiths gardens.
Q. When you get down to ~~the~~ Railroad bridge what is the width of the river?

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Ans. – I estimated it at 400 feet.
Q. How high are the banks there?
A. They vary. I would estimate them at 4 to 10 feet for a stretch along there.
Q. What do you say about the balance of the river down to the mouth
Ans. From the Railroad bridge of the C. P. R.R. down to the mouth of the American River the general character of the river is: that the water is 250 feet wide, say: the river bed is perhaps 1000 feet wide: and there are some large sand and pluckers bars: the sand is very fine: it contains considerable mica: and the pluckers are quite abundant stratified
Q. What is the nature of the country looking south from Roneys
Ans. Looking south from Roneys? Well from Roneys house I could not say. looking out away from the river, because I was near to the river. Looking south east I could
Q. Where do the cobbles disappear coming down stream?
A. I could not say exactly. but it is a short distance below Ford's Bar.

After that there were no cobbles of consequence

Q. What are the bars composed of in the river?

A. Sand and slickens and mica.

Q. Now what do you have to say if anything about the sand which you find down here? I will ask you if you continued your explorations down to the mouth of the river and down to the Sacramento bridge?

Ans Well, I walked along the bank

Q I will ask you what you have to say about the travel down stream of the material which is put into the ~~Sacramento~~ American River, out of Canyon Creek?

Ans I think about half of it: the large cobble and pebbles would remain near Canyon Creek the first year. The remaining half would be washed down further. The half which remains there would be washed a little further each succeeding year for this reason: I would be deposited in the bed of the stream and washed down ~~south~~ according to the velocity of the water and the carrying power of the water

3701

and moved them when the water rose the gravel and cut down through them, and cut away half or two thirds of them, leave the remaining half to stand a long time, perhaps at a succeeding and higher flood to be swept lower down. The coarse material has come down about forty miles to Dotsons Bar. That was about the last of the coarse material we found in the river. I judge from the fact that mining has been carried on, from what I have read of that river, about 20 years, that it moves down the river a mile or so a year: and as it has moved down at that rate in the past, I suppose it will continue to in the future, so far as regards the fine material: Of course the sand would be carried along much easier than this heavy material. A light current would carry that: a small stream would carry that. Hence as that small stream ran longer during the year, it would be carried down. The same would apply to the very fine sand and finer clay, perhaps. I do not

3702

know -- Only experiments ~~would~~ could tell -
The slickens or fine clay held in sus=
pension might be carried to the Sacramento
River the first season; that is the
most of it. At any rate - the most
of the sand. No! I would not
say that. A large proportion
of the sand would be carried
below Folsom the first season. and
there the slope of the river becomes
flatter and it would tend to
deposit

Q. What do you say about the
identity of the stuff in these sand
bars with the matter which comes
out of these mines?

Ans. From the law which I give ~~to~~
regarding the change of the color of clay,
pipe clay, of the bluish color to
slickens of the yellow and brown
color. I should judge that it came
from the mines on the American
River. the sand is fine and ~~smaller~~
similar white and dark to what
is found up in those mines. The
mica is similar to what I saw in
those mines. I could not claim that
one grain of that sand had been

303

had been there but it is very similar — the slickens — the clay and the mica — to what is seen in the mines.

Q. Have you made any observations in regard to the movement of sand along the bottom: sand that is not held in suspension by the water?

Ans. — I have not made any observations.

Q. Have you estimated what would be the movement of all the matter below the cobble stones by twenty foot stage?

Ans. I do not understand

Q. Given a twenty foot stage of water, what would be the movement by that — of Canon, down stream — of all the material which comes out of the defendant's mine, below the stratum of cobble.

Mr Belcher — The witness has answered that he does not know, and hence we object that the witness has shown himself incompetent to answer the question as an expert.

Mr. Cadwalader — He has not said that he does not know.

Witness — I have made no experiments
Mr Cadwalader. Can say you have
made none?
Ans. No experiments. That was my last
answer.
Q. Well. Can you state?
Mr Belcher — We interpose the objection.
The Court — If you do not know,
do not state.
Mr Cadwalader. I would ask you
if you have observed the mica among
the river sand and pebbles in the
Sacramento River? If so where.
Ans. I did observe it in the sands
most all the way from Folsom
down to the mouth of the American
River. I do not think that I ever
looked at a handful of sand: fine
sand: that was clean and free from
mud so that the mica need not
be disguised: that I did not see
small scales of mica —
Q. Does that include this bar above
the American Bridge?
Ans Which Bridge?
Q The Sacramento bridge. Does that
include the bar coming out below the
mouth of the American, above the-

the Sacramento bridge—?
Ans— Yes. I looked at that the other day. And I saw a few there Mr Cadwalader. I do not know whether your Honor wishes us to go into proof of the laws regarding the flow of water according to increase its velocity. This witness is prepared to speak on that subject. But if it is understood the text books are to speak oral testimony will not be necessary
The Court— I do not know as we will want it at all. I suppose it is established that certain books are recognized as matters of science.
Mr Cadwalader— Then I will not go into it. — What do you have to say about the operation of water from the pipes on that main bank, in regard to the degree of solubility of that bank or material when attacked in that way?
Ans— The bank is not as soft as some. And it is not as hard as some. It is as an average hydraulic bank I should think. The bank is sometimes loosened by powder. And then it is readily washed down. the best

3706

bed rock ditches into the sluices through the tunnel.

Cross Examination

by Dwight B. Huntley

Mr Belcher— Was this the first trip that you had ever made up the river?

Ans. It was except on the railroad

Q. Who employed you?

Ans Allardt asked me to accompany him.

Q— Was that all?

Ans— That was all.

Q. ~~Was~~ The employment you had?

Ans He told me that it would be paid for No one else approached me to go with him

Q Was it paid for?

Ans. It has not been.

Q—Have you presented your bill?

Ans—I have not.

Q. Who did he say would pay you?

Ans. The parties who bring this suit.

Q. Did he tell you who they were.

Ans I do not know as he told me—

Ans. I understood the Supervisors of Sacramento County -

Q. Did you prepare these questions which have just been proposed to you?

Ans - I did not.

Q - Or assist in their preparation -

Ans - I did not ask any questions. I was requested to write a report and I did so.

Q. And these questions are from your report.

Ans. I wrote no questions. I wrote a report -

Mr Cadwalader Here is the report which he gave me for my guidance and I asked questions from it -

Mr Belcher. The specimens which you have produced here, are first of fine sand and then of pipe clay and then of cobbles -

Ans - Yes ~~and small pebbles~~.

Q. and small pebbles -?

Ans - Yes

Q. You went down in the lower part of the mine, the pit as it is called

Ans - I did -

Q. And these three specimens you produce here, as specimens of what

you found in that pit

Ans- I present them as specimens of what I saw in that pit

Q.- Do you present them as fair specimens representing all that you found in that pit?

Ans- I do not as representing all I found in that pit. I could fill this room and not represent all that could be found in that pit.

Q.- Do you mean to say that there are fair specimens. Carrying to the mind of the Court an idea, and a fair and proper one, of the constitution of the bank or the constituence of the bank which you saw before you there in that mining claim?

Ans- As much as small samples could present to the mind of a person. I consider there could present a fair sample.

Q. Are the cobbles and pebbles which you have there presented a fair sample of what you saw in that mining bank

Ans- I cannot say that all the kinds of cobbles are shown in this pot. But looking along the various

3709

the various stretches of bank one does not see much difference in many places. It is a remarkably uniform bank. And I took these samples from two places. looking at several and saying to myself. Now is that a fair sample "The large stone that I have taken did not happen to come from those places. I dug them out — these samples — with a pick; and I picked that up afterwards, because I wanted to show what I considered about the largest sized average pebble. Of course there are some of several hundred pounds, but I wanted the largest size average pebble of the bank. I took that from another place, but the rest all came out together. I was not picked, a handful of fine or a handful of coarse —

Q Is the gravel bank there hard or soft?

Ans. In that case hard and soft must be a comparative term. All that we can say now, after the mine has stood idle for some months would be, much softer that when it was originally caved down.

3710

Q. You state. "all we can say"
Do you mean there simply for yourself or
yourself and others?
Ans - Any person who goes and looks at
it would not see the bank as it really
stands ~~after~~ the day after it caved down.
It is softer than it would be if it
was fresh.
Q. Do you say that it is soft now
Ans - It is not very soft now.
Q. Well is it is hard?
Ans. As I say hard and soft are
comparative terms. I would not say
it was hard and I would not say it
was soft
Q. It is not hard like steel?
Ans No most certainly not -
~~Q.~~ No soft like putty?
Q. It is pretty hard like rock?
Ans It is not ~~so~~ hard like rock.
Q How is the bottom?
Ans The bottom at the north end
of the pit I judged to be harder
than at the south end of the pit. because
some was left. and I believe they said
it was hard -
Q. You must not say what they said
but what you saw -

3711

Ans – At the south end of the pit, at the bottom. The bank had been cleaned up as well as at the top, and so I judge it was not much harder.

Q – And your judgment was based simply on the fact that it had been cleaned up

Ans – In that case –

Ans – Yes

Q Now do you mean to say that the big cobbles which you have presented there, the two largest of them, are fair samples of the cobbles in that pit?

A For several hundred feet —

Q <Cut> Cannot you answer a question more directly than going on with a long story? Are because the question —

Q <Cut> You can say whether it is a fair sample or not. It seems to me that is a short answer

A Will you modify your question and say all of the cobbles? Will you modify your question and say all of the cobbles or a part of them?

Q I will take all the rock which you saw there.

A I do not consider that a fair sample of the largest of all the rock that I saw

3713

there, no.

Q How large did you see see them? A On the Eastern side of the pit I saw a rock weighing several hundred pounds.

Q Abundant, that kind? A No not very. They would not if placed close together cover the bed rock

Q Take them all out and they would not cover the bed rock in a single layer A Those that I saw the bank had not been worked up clean to the face. It had caved down and of course the rocks broken from the clay and bank, and those I could see

Q The very fact if it came then would always naturally carry the light material over the heavy would it not and carry it farthest out into the claim so that the heaviest material would be in that way concealed

EXH 714

from view? A I do not think necessarily so.

Q Is that the ordinary way or not?

A I think if ~~more~~ large material were in the upper strata, the large material falling loose would be on top. If they were in the lower strata they would be on the bottom and covered up

3715

Q Now say that Powder has been used in this claim? A I judge so

Q Does powder always leave the outer portion of the bank softened? more or less shaken up so as to make it have at least a much softer appearance than it otherwise would have?

Ans not always

Q It does not always, does it ever?

A Depending considerably upon the ground. The whole ground will shake up quite often and some will partially shake up and leave large lumps

Q Did you look at this to see what effect powder would have on it? A I did not look at it particularly with that object

Q Did you ever see

3716

powder used in any mine?

A I have never been present when any blasts have gone off in any mine

Q When you do not know what its effects are?

A I have seen banks after powder has been used

Q Where? A In Trinity County.

Q Where else in Trinity?

A Excuse me, I will correct that, in Shasta County

Q Well where in Shasta?

A It was near Igo or Piety Hill at the mine which was owned by Hayward. Mr Sneath was the Manager. I cannot tell the name of the Company. I saw that last Spring

Q At Piety Hill?

A Near Piety Hill

Q Was the bank there

at all like the Bank at Gold Run? at the Gold Run mine? A The material of the bank is stone, the cobbles were not the same as those at the Gold Run mine they were granite mostly. The bank was, I should judge not quite so high

Q Did you see enough of it to be able to judge or to compare rather the two together - have you seen enough of either of them to be able to make any kind of reasonable comparison?

A I think so

Q Did you ever mine yourself? And sir, not with the hydraulic pipe

Q In what way have you mined?

A Quartz mining in Nevada, that is I do not mean quartz mining

3718

I mean Silver Mining

Q Well isn't silver mining quartz mining?

A Sometimes we find silver in ores which are not quartz and it would hardly do to call it quartz mining

Q That is what it is generally called whether it be found in quartz or not is it not?

A Not among men who understand what they are speaking

Q What do they call it?

A Silver mining

Q They call it Silver mining simply? A Yes sir

Q In what kind of rock do they find it?

A In a soft ochre, containing a large per centage of other things

Q Where about were you mining there?

A At a place called Sodi in Nye County

3719

about 70 miles South West of Austin

Q You spoke about the proportion of sand which you found in this pit in the bank and that it was one half sand if I understood you?

A Sand and clay?

Q That includes the pipe clay? A Yes sir

Q Is there any pipe clay there? A There is

Q In the pit?

A In the pit — on the Eastern side there are layers of pipe clay.

Q How thick? A 6 to 10 feet

Q 6 to 10 feet each of them? A Yes sir

Q That is on the Eastern side below the level of the earlier washings?

A I do not know how the level would strike there is a bench worked off above this pipe clay

3/20

down to it and therefore I assume it is in the pit

Q Did you examine at all above where this pit commences in the upper portion of it, did you examine the country up there or through where the washing had been done at an earlier day?

A Not all over it, over a part of it

Q Did you go in the neighborhood so as to determine if the plane of that working would include these benches of pipe clay which you speak of or not? or whether this pipe clay comes within the pit as it has been spoken of here, proper?

A I could not say whether both layers of the pipe clay would come within the pit or not.

3721

Q Would either of them?
A I think the lower one would certainly
Q Where did you look at from the bottom or from the top? standing yourself on the bottom or standing yourself on the top? A I was on the one side of the rim and looked down and I was in the bottom and all around the sides and looked up, and that was my opinion
Q That was your conclusion?
A Yes sir
Q Where did you find this pipe clay, this specimen which you brought? A It had been part of a cave that had fallen from this Eastern bank into the pit
Q Now then coming back again to the sand I want to know what proportion, or of the sand

of which you there present a specimen constitutes one half in your judgment of the entire mill of that mine?

A The sand occurs in—

Q Lumps? I don't care where it occurs, whether it be in two or three or forty places. I want to know the proportion?

A I estimate according to the best of my judgment that the sand less than the size of a pea, sand and clay is one half of the material in the pit

Q Do you include clay in sand? A In that sand there is some clay.

Q Did I ask you about sand and clay or something else?

A I could not separate and tell you the proportion of clay in that sand, it is easy to estimate

3723

them together and it is very difficult to estimate them apart and that is why I remember them.

Q Does the sand which you there present contain clay? A It does

Q Does that contain pipe clay? A It does not

Q Then of the sand such as you have there do you now say that it constitutes one half of the material which should be taken out from that lower level or from the pit? A I think that including the clay would

Q Including that clay? A The clay with the sand

Q Well I was including that, the full material Take the sand such as you presented there which you say is part clay, have you determined what proportion of clay?

A I do not know what

proportion

Q How did you estimate the quantity or proportion?

A simply by looking at it and thinking of it and making up my mind from what I could see what proportion was boulders and pebbles and what proportion was fine material

Q And your conclusion was that it was half the material which you then present? A About half

Q And the other half was what? A The other half was large pebbles and small pebbles smaller than the size of a pea.

Q How long were you in the mine? A We went down that morning after breakfast and got home just in time for supper

Q How long were you in the pit? A Probably

3/20

half of the day, half of the time I was absent — not quite half of the time I was absent, perhaps three hours

Q Three hours in the pit? Did you go to Dutch Flat on that trip or did you ever go there? A I have been through Dutch Flat but I didn't go there that trip

Q Did you make an examination of any of the mining claims there or did you go in to them?

A I did not

Q What did I understand you was your specialty? A Metallurgy

Q And have you ever had any special practice in the matter of judging of sands or the qualities and character or composition of rock?

A Which question do you wish me to answer sands

3726

or rock?

Q I wish you to answer them all

<The question is repeated>

A Yes sir I spent one year at the University of California analyzing slags and ores

Q To determine what?

A To determine their chemical composition, at the same time I was studying mineralogy

Q Well is that the extent of your experience in that direction? A Having been in the mines and having studied these things, one sees a great many specimens and gets ideas of them and forms opinions. That study and that experience is all ~~the study~~ that I have had

Q While you were in Nevada at the mine what was your business

Q 727

there? A It was various, I was assaying, I was surveying, I was book-keeping, I was smelting, I was refining, melting bullion and I was in the mill

Q A man of all work?

A At times men were short and one was compelled to step above and below his position

Q Do what class do the rocks which find here in this mining claim - and now I speak of the pit particularly - belong?

A In general to the sedimentary rocks.

Q What do you mean by the sedimentary rocks?

A Rocks that have been deposited from waters as sediment in opposition to igneous rocks which have been thrown out of volcanoes

3728 Q What is quartz, is it

Igneous or sedimentary?

A There are two kinds of quartz

Q Do you find both kinds there or only one?

A I think both kinds are

Q What are the names of the two? A One variety of quartz is rock crystal

Q Did you find that?

A I think cracking some of the quartz pebbles you will find that they are crystals

Q Did you find them there? A I saw quartz pebbles.

Q Did you see rock crystals? A <continuing> which show crystallized faces

Q What is the other kind of quartz?

A Amorphous quartz

Q Did you find that?

A Amorphous silica it is called ruben.

Q Which do you call it?
A Amorphous silica
Q You do not call it quartz at all then?
A Quartz is silica and therefore ~~is~~ amorphous silica is very much the same as quartz
Q Then if amorphous quartz and amorphous silica are similar and I am inquiring of quartz, not silica at present—
A <Well> I do not know as amorphous quartz is the correct expression
Q No matter whether it is or not, if you call it by that name.
A I call it amorphous silica and you call it amorphous quartz
Q I do not call it at all. I am asking you to call it
A What is the question
Q Well I think that is a very pertinent inquiry. If there are two kinds of

quartz I want to know what they two are. You have spoken of one which is rock crystal and of another. I want to know what it is?

A amorphous silica, gelatinous silica

Q Well amorphous silica is quartz is it?

A It has the same chemical composition

Q Well do you call it quartz? A I do not call it quartz

Q What are you calling it so for here?

A You asked me about the composition of the two kinds of quartz

Q I asked first if there was more than one kind and you said there were two and then I asked you what they were and you said rock crystal was one and I was trying to find out what

the other was, if it was that. A Amorphous silicon

Q Well is that quartz? If it is not you have no business naming it here

A It has the same chemical composition. It is silica, the oxide of silicon. It is a different modification of quartz technically speaking it is not called quartz it is silica. When we speak in general terms we will call it quartz because it has the same chemical composition, the specific grasity of rock crystal is 2.6 and of that amorphous silicon is 2.2. Aside from that chemists do not know the difference

Q Well is that all?

A I believe that is all the difference

8732

between those two

Q Now then I want to get back to the answer into the kind of rock you found in that pit

A There were quartz pebbles, there were schistous slate pebbles, there were angular or sub angular fragments of a rock which I took to be something like serpentine

Q Is it serpentine?

A I could not say except as I glanced at it it resembles it. I have not tested it also there is a kind of very hard heavy pebble that contains a large per centage of silica .. It is very quartzoze, I could not name the rock of which it is composed, it is not sedimentary rock but I could not give you its name, I think I saw a few pebbles of porphyry

Q. These are nodules are they in the sedimentary rocks?

A No, I would not call them nodules

Q You do not call it like flint and chalk?

A Not by any means

Q. It is from a mass of rock which is homogenous, and this is a part of it, is that what you mean?

A No, I mean these are pebbles which have been—

Q How are pebbles formed

A. Pebbles are formed by erosion of their angles in the bed of the stream by attrition one against the other

Q. That is simply by wearing, wearing it off? A. Yes sir

Q. Now if that is the case you say you have a hard pebble, a very hard one— Now I want to know if that is a piece of a rock of homogenous character, or whether it is harder than the rock out of which it is taken; that is

the mass of it — that does not need any explanation.

A. There are different kind of pebbles there, I mean to say

Q. Am I talking about one class, and you about another?

A. I do not know

Q. Did you say there were some that were very hard?

A. I said

Q. Well, are you talking about those? A. I do not know which kind you are asking me about. I have mentioned several kinds — quartz — slate and siliceous slate

Q. I wish then you would confine yourself for a moment to that which was very hard which you spoke of?

A. Yes sir

Q. Now, I am inquiring how those were formed — I mentioned the formation of flint and whether that was like or that, or whether that was part of a rock and the rock was homogenous

8735

A. I think it was a regular fragment of homogenous rock.

Q. (Interp) That is enough then. You spoke of mica in the pipe clay?. A. Yes sir

Q. Abundant?. A. Considerable

Q. Making what proportion of the pipe clay?. A. I did not estimate it

Q. You did not make any estimate at all?. A. I did not proportion the mica in the pipe clay

Q. Did you find mica in any thing else there?

A. No sir, I did not

Q. If it is not in any thing else there is it?

A. I do not know I did not see it any thing else

Q. Then if I understood you correctly from Cain Creek down for 10 or 15 miles you say very little mica?

A. Very little — none

Q. I think it was none that you said, none until you got down to Folsom

A. I covered not say none until I arrived at Folsom

Q. Yu may have found some below the South Fork?

A I may have, I do not remember

Q Yu do not remember about that? A. No.

Q You have spoken of the cobbles which Yu find below Folsom, I think Yu states that in Yur judgment those came from the bars along the sides of the river between this and Folsom? A Yes sir

Q. As well those that Yu find in the river as those in the banks? A. Yes sir

Q. And on the bars?

A Yes sir

Q And that from Folsom to Rattlesnake or there abouts Yu found them — or to Dotens Bar I believe it was, Yu found no cobbles?

A I did not see any cobbles the river is comparatively clear there were some

8737

Q Practically no cobbles?
A Practically there are very little in the river
Q. Now above us at some places when you say that mining had been done on the high benches along the banks, there you found bars on the sides? A Yes sir
Q. But smoothed, leveled down?
A Yes sir
Q. Was there any indication that those bars had been moved from their places or only leveled down? A The material of the bar moved?
Q Yes sir? A Three ways
Q. Where? A At every bar from Oatens Bar, Horse Shoe Bar, Rattlesnake Bar and Lacy's Bar
Q. Those three bars. Now then at those three bars?
A At Every bar. I have only mentioned those three but there were others beside
Q. At every bar, that where mining has been done on the bank of the stream immediately

938

there, you say that it was only light material that they had washed out?

A I judge so

2. That was your judgment and that is what I am following.

A Yes sir

2 Your judgment was that the heavy material was all retained back in the claims?

A Most of it

2. And only the light material washed out, and that that made a heavy bank in the river during low water and when high water came it cut it through? A Yes sir

2. And carried off a portion of it, and you found fragments of bars there, that is what you mean, is it, that, where you found those fragments of bars, was where these had been mining on the margin of the stream, or on those banks the second bench as it is sometimes called here, that mining material had been

3739

thrown into the river, the light material and the water had cut through it?. A Yes sir

2. What is all you meant by fragments?. A Fragments of what

2 Bank or Bar?. A Yes sir

2. You spoke of Roda Bar, where is that?. A. Roda Bar is on the other side of the American River between Folsom and Sacramento. It is there (referring)

2 About what mile?

A It is marked between the 64th and 65th mile.

2 Did you go over on that bar?. A. I did not

2 You saw it simply from the opposite side of the river

A Yes sir

2. At a distance of a 1000 or 1200 feet or more?

A. To the further side of the bar it would probably be that distance

2 When you speak of the Railroad Bridge, when you gave the distance there as 400 feet did you mean the

3740

width of the river channel immediately then? A I did

2 Simply from bank to bank of the river channel?

A. The water that was flowing out the day that I visited it, I estimated it to be 400 feet wide.

2 That was the width of the water as you then saw it?

A Yes sir

2. That the water filled from bank to bank?

A. It filled of course the bank, but there was a layer space that higher water comes fill

2 Ordinarily when we speak of a stream and the banks of a stream we measure from bank to bank although there may be a bar un covered one side or the other, do we not? When we speak here, is there a distinct bluff bank on the one side and a bar on the other at very low water - and that is the case in almost all mountain streams par-

3741

ticularly is it not?
A I do not know.
Q Did you ever see one that was not so? A Yes sir
Q Where? A. The North Fork of the American above Canon Creek, has no bars.
Q. How far did you go on it
A I could see it perhaps half a mile.
Q Half a mile? A Yes sir
Q. Would a half a mile necessarily determine the character of a stream? A. It would determine that portion of it most certainly
Q. ~~That~~ It would determine that half a mile, of course it would — Did you ever see any other stream that at low water did not have some margin on its banks left bare from place to place along?
A Yes sir
Q. Where? A The Sacramento River years ago did not have any bars from bank to bank.
3742 I remember in passing down

it in 1865

2. In 1865 it had no bar. From what point to what point did you pass?

A. I passed from Sacramento to San Francisco in 1865

2 In 1865, at what time in the year? A. I do not remember it was not in the winter, it was in the summer, or Spring, or fall. It was not in the winter. It was not in high water

2. It was, not at high water. Was it low water?

A I do not know that it was

2 Was there a bar opposite the town or city of Sacramento

A. That is I have been gone ago and I do not remember

2 Was there a bar about five or six miles below here?

A I do not remember

2. Was there a bar at Freeport?

A I do not remember

2 Was there a bar as you come a little way this side of Collinsville and entering into the slough?

(38)43

A I do not know where Collinsville is

Q. Then what do you say that the Sacrament is an example when there were no bars, if you do not remember anything about it?

A Because at that time I was out on the outside of the boat most of the time and I remember the Sacrament was quite distinctly, it was the first trip I had ever made on as large a river as that, or any river, and I do not remember seeing any bars, I remember seeing the willow and grass banks and the large waves that the steamer made swashing up and washing down some of the banks, and tossing the willows, but I do not remember any bars

Q. Were waves what attracted you chiefly at that time? A. I do not know. Almost every thing that was new attracted me.

3744

2. Where is Texas Hill?
A I do not know, I have heard it mentioned as on this map
2 You do not recollect it?
A I know it has been placed between Folsom and Sacramento, out of my own knowledge I do not know, neither have I seen it on any other map besides this
2. You do not remember having seen it yourself as you came down the river?
A I may have seen the hill, if it is there I must have seen it but I was not told it was Texas Hill. I had a map coming down the river and it was not marked on that map.
2 You do not remember at all about Texas Hill, or whether there was such a place or not. What map did you have?
A. I have the tracing of a map from State Engineer Hall's office, which was made this spring by the State Engineer
2. Did that extend above Alder Creek? A It extended nearly to Folsom, I think it shows the mouth of Alder Creek only

3745

# Testimony of George B. Cosby

Called for Plaintiff Sworn

Mr. Hart - State General Cosby; where do you live?

A - I have been residing for the last three years in Sacramento.

Q What is your occupation?

A - I have been Secretary of the State Engineer during that time.

Q Secretary of the State Engineer?

A - Yes.

Q State whether or not you ever had occasion to visit the mine of the Gold Run Ditch and Mining Company known as the Gold Run Mine?

A Yes.

Q Do you remember upon what hill it is located?

A - On the 3rd of November, I was directed by the

State Engineer to proceed to Indiana Hill and to assist Mr. Gnusky in making a measurement and examination as I understood of the washing that had been excavated in the pit, in Indiana Hill, the pit of the Gold Run Ditch and Mining Company.

2. You say it was on the 3rd of November?

A. On the 3rd of November I left here and arrived there on the night of that day

2. When did you first visit the mine- What time of day?

A. On the fourth Mr. Gnusky and myself proceeded to Dutch Flat, where we met Mr. Gould and he returned shortly after one o'clock I think with us to Indiana Hill.

2. Can you ~~give~~ describe with reference to any natural ob-

(3747)

jects, you saw where the mine is located.

A- If I remember right sir it is about south from Gold Run, about one mile, Between that place and the North Fork of the American river.

Q. Did you make any examination of the mine itself, the Gold Run mine?

A- In what ~~re~~ respect sir?

Q. Well in respect to the character of the mine — and inside of the pit of the mine?

A- I did, as to the extent of the mine

Q. What examination did you make? Just describe the pit to the Court and state what your examination was of it?

A- I merely made a casual examination of it. Mr. Grimsley was there and I assisted him in the first place to some extent, in establishing his lines. He had been ordered

to make a careful instrumental survey and I depended upon him to get the extent of the mine.

Q. Describe, I mean, as nearly as you can, its nature?

A. It was a very large pit - the entire mine. It was somewhat oval in form, and the lower workings of that mine which were pointed out to us by Mr. Gould as I believe were about a thousand or eleven hundred feet - twelve hundred feet in length and about eleven hundred feet in width and varying from 120 to 140 feet in depth.

Q. Did you notice in the mining whether there were any apparatus used in hydraulic mining?

A. I did, sir. There were pipes and monitors or giants, whatever you call them in position. I think I noticed three of them.

Q. Three of them in position

A- I think three of them, two certainly

Q- Did you examine the character of the material in the mine itself?

A- I made a casual observation sir. I was not competent as an expert to judge of the character of it ordinarily.

Q- Well so far as you were able to, what did you see there?

A- It seemed to me to be of hard cemented rock- composed of cobbles, gravel and sand and clay- acting as the cementing substances. It seemed to be all quite hard.

Q- Did you take any of the rock in your hand?

A- I did one or two of the cobbles sir, a few of them

Q- What was the nature of the rock that you took into your hands with reference to its strength or texture?

A- I attempted to break one

3700

or two and found that they gave out a ringing sound and seemed to be very hard. Others, with a much less force would break up into several pieces.

2- Did you examine to see where the material coming from the mine, through the process of Hydraulic mining, went to?

A- Yes

2- Where it was carried to from the mine?

A- Yes. In the bed-rock in this pit there were two or three ditches leading into a tunnel, concentrating in to the tunnel, it went from there and had its mouth in Eaton Creek.

2- Where is Eaton Creek located with reference to the mine?

A- It is east of the mine sir.

2- Before coming to that, I will ask you did you see any considerable amount of material that had been

3751

washed in the pit of the mine itself.[2]

A I did not sir. It seemed to be, as far as I could judge, clean, at least the bottom of it was. On one side there had been a very extensive cave, ~~this~~ or ~~slight~~ slide of the ground and on the other, there was a mass of clay that had been broken up and was still lying there in large cubes. I was told that there was where they had been working

Q On the East side.?

A Yes; if I remember rightly it was on the East side.

Q About how large a mass was there?

A - I could not pretend to say.

Q You can make an appropriate estimate of it can you not?

A - It was one hundred or more feet long and probably fifty or ~~sixty~~ ~~from the~~ feet high. It looked to be about

3752

that large, from where I was.

2- And how wide?

A- I think perhaps one hundred or two hundred feet?

A- I can not pretend to say exactly. That was along the base of the pit.

2- How wide was it on top?

A- I could not tell you. It was broken down, it had slid or fallen apparently.

2- Had that material been washed

A- I presume it had sir.

2- It had been washed by the hydraulic process?

A- I presume so

2- Did you follow through this tunnel that you spoke of, which is the out-let of the mine?

A- I did not sir.

2- Did you see the mouth of that tunnel?

A- Yes. I went in company with Mr. Allardt, Mr. Hundley and Mr. Pierson to the mouth of it.

2- What is the character of the

canon there ~~o~~ where the mouth is?

C A ~~This~~ It is a canon with a very heavy grade and precipitous, almost vertical sides. It is about twenty five feet wide I think ~~not~~ in its bed, that is at the ~~extremety~~ of the flume leading from the mouth of the tunnel

2- How deep is it below the mouth of the tunnel?

A- Do you mean is the bed of it?

2- Yes

A- I should think it was twenty or twenty five feet from the mouth of the tunnel, from the level of the mouth to the bed of the creek.

2- What kind of a bed has the creek there?

A- For a very short distance there it seems to have a smooth bed fifteen or twenty feet wide.

2- Did you find ~~there~~ any evidences of deposites of debris

8754

from the mine?

A- They were exceedingly small. There were some few cobbles there but the amount was insignificant

2- Did you see any thing there which gave you any evidence as to whether or not the deposits had been carried away - any evidence of washing?

A- I noticed about about fifty or sixty yards I think below there an unusually large pine tree and the roots running out into the bank were horizontal ~~roots~~ and were exposed on the side next to the creek, it had the appearance of having been washed down ~~in that~~ instead of a deposite having been made there?

2- How could you determine whether the bank had been washed down or not?

A- Simply by the appearance of the roots of this tree

2- Were the roots in the ground or above the ground?

8755

A- They were exposed above the surface.

Q- How much were they exposed?

A- I should think five or six feet on the side, next to the creek. The horizontal roots were entirely uncovered.

Q- Did you notice the character of the bed of the cañon whether or not the fall was steep or slight from there to its mouth - to the North Fork of the American river?

~~A- An observation was~~

A- An observation was taken at the mouth and ~~when~~ one at the level of the water in the American river. And the difference ~~in~~ the level was about 1020 feet and the distance, I believe, as somewhere ~~I went~~ between a half a mile and a mile in an air line

Q- Was there any water running down at the time?

A- There was a small stream of water in it.

3756

Q- How did it run, with what velocity would you say?

A- It seemed to run very rapidly and created quite a noise for so small a stream, it went down from one level to another in a series of falls.

Q- Were there any falls of any considerable height there?

A- I noticed three or four places where undercurrents had been made and there were falls of twenty five or thirty feet in its course.

Q- Did you go up Canon Creek for any distance?

A- No sir, ~~they filled~~ I went up only for a short distance where the road, leading from there to Gold Run, runs up along the bank of the ~~stream~~ creek

Q- Does it run along the edge of the gold hill ridge?

A- along the edge of what?

Q- The Gold ~~Hill~~ Run Ridge I mean?

A- It starts from the in the ridge and runs in the

8757

direction of Gold Run and after that it descends and goes down through various excavations that have been made there.

2- How far up the ridge does it run?

A- I do not remember sir.

2- Did you notice the ridge in which this mine is located particularly, beyond the immediate limits of Indiana hill? A. I did not sir.

2 Did you see any mines there other than those in Indiana Hill?

A- I saw a great number of pits between there and Dutch Flat a great many excavations.

Q- Could you tell where they dropped their tailings?
A- I did not examine them particularly as to that, I understood at the time, that they all went down-
Q (Judge) Were they along by the side of any streams?
A- It appeared that originally there had been a stream running through the centre of them as near as I could judge.
Q- That there had been a stream running through the center of the mines - a natural stream or was the water conducted by artificial means?
A- From the lay of the Country there, it appeared to me to be a natural stream.
Q- Were there near Lemon Creek, any of these pits that you speak of?
A- Indiana Hill was nearest. There were a great number between there and Gold Run but I didn't notice them

particularly. I confined my attention almost entirely to that pit and to the canon from there down to the American River.

2- How far up the canon did you notice the fall of the creek? A- A very short distance, Sir, and that merely casually as I looked down to ~~the~~ it, from the trail we were following.

2- Can not you give a general description of it, where you saw it from the mouth of the tunnel up the stream? A- Above it?

2- Yes? A- Well it would appear to me as far as I did see it that the grade was about the same. Perhaps it was ~~nearly~~ quite as great as from the mouth of the tunnel down to the river. There was a very heavy grade and a very rapid descent as far as I saw it. I saw three or four small bridges, if I remember

rightly, over it, showing that the location was very deep there and that the banks were high bluffs.
2— What was the nature of the water that was coming down Lawson Creek at the time you were there?
A- I think the water that was running into it above the mouth of the tunnel was clear. I suppose there was about an inch deep of water running through the tunnel and it was very filthy and dirty.
2- What was the color of the water that was going through the tunnel?
A- I would call it a greenish yellow. It was a very dirty greenish, yellow.
2- Did you see where it went to? A- It went into Lawson Creek.
2- Where did it empty into Lawson Creek? A- At the mouth of the tunnel.

Q- Did it go right over the bank? A- No Sir, If I remember rightly it went out through a wooden flume for a few feet and dropped down.
Q- It dropped directly into the Creek?
A- Yes. That is my recollection.
Q- What color did you say that water was?
A- Well it was a greenish yellow. A dirty color.
Q- Did you notice whether or not it had any effect upon the water in Eaton Creek below?
A- Between the tunnel and the river?
Q- Yes? A- It seemed to have the same color after the two mingled together. That which came from above and that which came out of the tunnel; it was dirty.
Q- What other observations if any did you make of the

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mine? A- I noticed a general fall of the entire bed. I noticed where the original excavations had been made. I saw what was pointed out to me there as a portion of the tunnel that I believe was formerly used to discharge the first washings from the mine. I noticed near the southern part of it a considerable quantity of the bank that had been blasted and was lying there in the condition in which the blast had left it. I noticed that a great portion of the lower part of the pit was comparatively clean the bed rock was visible there, for almost its entire extent. That is at the extreme lowest point.

2- This portion that you say had been blasted was that inside or outside of the tunnel?

A- It was in the pit and outside of the tunnel.
2- I mean inside or outside of the pit and not the tunnel?
A- Inside of it.
2- Do you know whether or not that was in ~~the~~ a position to be washed?
A- It was there, apparently as it had lain ~~without~~ after having been blasted, after the blast had been set off.
2- Do you know whether it was ready for the operation of the water upon it?
A- I do not know enough about mining to say.
2- Now commence at the mouth of Eatan Creek and make a statement of your observations down the river that you made, down in company with Mr. Gemsky and others? Give it as you go along, your locations or at least your path, the road you followed, and the general description of ~~it~~

3764

each section of the country as you passed through it and also the amount of deposits that you found in the river?
A- Mr. Allardt, Mr. Hennlly Mr. Grunsky and myself went from Gold Run down by the way of what I think is called Iowa Hill trail until we came down to the bed of the river. We ~~then~~ ~~found~~ followed up the river to the mouth of leanow break There was scarcely any, very little deposits there in the river and from there down to the Iowa Hill trail ~~and~~ a distance as I remember ~~was~~ of about two miles

..was ~~two~~ ~~pretty~~ perfectly smooth, a buggy could have been ~~ridden~~ driven over it very easily and it seemed to be filled ~~finely~~ evenly from side to side. The banks were very precipitous making, I should think about an angle of

3765

fifty degrees to the horizon
The middle of the river in
that reach, I estimate about
two hundred feet. That is
the average width, To the
Dawa Hill trail.
Q- How far is that?
A- That was about two
miles below the mouth
of Eatron Creek.
Q- Did you make any est-
imate of the amount of debris
there, if there was any
there? You say that there was
a name there?
A- At that point there
was very little.
Q- I mean below the mouth
of the Creek?
A- I mean just at the
mouth of Eatron Creek
there was very little.
Q- From the mouth of
Eatron Creek down?
A- The mouth of Eatron
Creek down in this section
of the river that you have
described, did you make

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any estimate of the amount of deposit in that section?
A- The estimate that I made was necessarily merely an approximation; We went over the country very rapidly. I estimated the width of the river in that section to be two hundred feet and its length to be about two miles and in this distance if I remember rightly, I think the depth, I estimated was about fifteen feet Taking the width to be two hundred feet and the distance two miles I made ~~on~~ the entire number of cubic yards in that reach to be one million forty two thousand nine hundred and sixty two.

Q Did you at the time you made that Estimate make any Comparison with the Estimate that was made by Mr Grunsky ?
A. I did sir, as to the length and the width.
Q. And the depth ?
A. Well we Compared that and it did not agree
Q What difference if any was there between your estimate and that of Mr Grunsky ?
A. Not much sir I think. I estimated the depth to be four or five feet more than he did.
Q What were the figures as you made them ?
A. One million forty two thou.- and Nine hundred and sixty two Cubic yards
Q. Now coming down the Stream make your own Statement and I will not interrupt you any more than I can help ?
A. From Dowd Hill to Stevens bridge I assumed the depth

3768

to be twenty feet, the width one hundred and sixty five feet the distance three and seventenths miles and the number of cubic yards one million eight hundred and forty two thousand four hundred thirty two. from Stevens Bridge to Rices bridge I made the width one hundred and fifty five feet the depth fifteen feet the distance one and eight tenths miles and the deposit five hundred and forty five thousand six hundred cubic yards. From Rices bridge to the lower end of what I call Rocky Canyon I estimated the Amount of deposit in the Canyon As being exceedingly small, I Call it nothing. It is a narrow Rocky gorge. In the bed were boulders and water washed rocks And there was no evidence of any deposit to any appreciable extent. The grade is very heavy Q What did you say was the length of that Rocky Canyon

A. It is about two and a half miles. I went into the head of the canyon some four or five hundred yards and I went also into the mouth also but I did not go entirely through it, I judged simply from what I saw of it at its head and at its mouth, From the foot of this last canyon of which I spoke to Shirt Tail Canyon I estimated the depth to be twenty five feet the width one hundred and seventy five feet the distance two miles and the deposit one million one hundred and forty thousand seven hundred and forty cubic yards, From Shirt Tail Canyon to a canyon which Mr Grunsky and myself called Rocky Canyon Number two the head of which is just below a marked granite boulder high up on the hill and below a lime kiln I estimated the depth to be twenty feet the width two hundred and twenty five feet the distance

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three miles and the amount of
deposit five million five
hundred and seventy two
thousand eight hundred and
twenty five Cubic yards. Through
this Second Rocky Canyon the
length of which we estimated
at one and four tenths miles
it was very similar in its
character to the one above
and I estimated the deposit
to be nothing, Then from this
Rocky Canyon to the middle
Fork I estimated the deposit
to be 50,000 Cubic yards, Total
deposit from Canyon Creek to
the Junction of the middle and
North Forks I estimated to be
ten million two hundred and
nine thousand and sixty seven
Cubic yards, From Canyon Creek
to the middle Fork Mr Grunsky
and myself followed immediately
in the bed of the River and in
doing so we were enabled to
make perhaps a fair estimate
of the deposit and of the character
of the Stream, From the middle

Fork I was compelled to leave
the stream and I only saw
the River at a few points on
the road from there down
Q You did not accompany
Mr Grunsky on his trip down?
A. No sir he was not satisfied
with the inspection he had
made and he went to Auburn
and followed it from the North
Fork dam down to Folsom on
foot,
Q What was the Character of
this deposit that you have
testified about?
A. It consisted of cobbles- gravel
and sand in the bed of the
stream, They seemed to be
Sementd together, Compacted by
Sand, Q Where the water was
running very deep was there any
Considerable Amount of sand
A. At different points there was
but not very much I should
say in Comparison with the
Amount of Cobbles and gravel
At almost every Crooked elbow
in the River, on the Convex

3772

side at these various elbows there were bars at nearly all of them, generally of clean washed Cobbles and gravel,
Q Generally of clean washed Cobbles and gravel }
A. Yes.
Q What proportion of the deposits that you have spoken of there would be sand and sediment
A. Down to that point I should say it is very small,
Q What proportion would you put it at } A. Except in the bed of the Stream where I could see that the sand had filled in the interstices of the gravel and Cobbles there was very little sand. No Sand almost
Q No sand } A. I do not mean to say that exactly I mean to say a very small amount,
Q. You mean to say that there was so little that it is not worth mentioning }
A. Well occasionally there were some bars of sand that were

of almost pure sand but if my memory serves me right there were very few of them in that part of the River.

Q What was the general Nature of the River so far as its fall is concerned from the mouth of Canyon Creek down to the Middle Fork ? A. It had what I would Call Sir a heavy grade, I estimated it at about from thirty to forty feet per mile

Q Thirty or forty feet per mile

A. Yes.

Q Could you tell from any Signs there which you observed about what was the high water mark ? A. At a great many points in fact almost Continually down the stream there were what I took to be the Average flood lines marked very distinctly on the rocky places of the Canyon.

Q About how high up above the bed ? A. In a great many portions of this reach the deposit had reached this

line and in others it was eight or ten feet above it. The height of this line above the deposits in the River was very varied and it went from Nothing to ten or fifteen feet — The height of the water as I found it on the sides of the Canyons above the present bed of the River,

Q How was the water line in places where there was no deposit with reference to the line of the side of the hill and the sides of the Canyons?

A, The Water?

Q Yes ? A, There was a very small stream of water flowing then and in many places the marks were 25 or 30 feet above the surface of the water at the time I was there,

Q And in other places there was not so much difference did you say ?

A Not so much where there was a deposit because it

3775

had been filled up, I think it was at least 30 or 35 feet in this Canyon just below Rices bridge.

Q Could you tell whether or not this point 30 or 35 feet was the extreme high water mark? A. I am satisfied Sir that it was not.

Q It was not the extreme high water mark?

A. No Sir. I considered it to be the result of a series of floods which had marked it at that point. An extraordinary or exceptional flood I judged might be very much greater and still leave no permanent marks.

Q What were the nature of these marks? A. The face of the rock was worn smooth and was of a lighter color than the balance of the rock.

Q Could you tell about what depth of water had worn the rocks? A. They were merely abraided and polished on the

Surface,
Q Was that at the immediate edge of the high water mark as you saw it or was it all up and down the sides of the rock } A. There were a great many places where we were unable to find those ~~rocks~~ marks,
Q Where you did find it did it extend from the top mark to the bed of the stream }
A. It was better defined at the top than it was below,
Q In your examination you have testified as to the character of the River between the Middle Fork and Canyon Creek, Did you make any examination of the River below the middle fork }
A. Yes. We attempted to follow down the stream in the stream and we found that we could not do it, and we went down from Auburn to the North Fork dam and from there we left it but returned to the River

3777

at various points, The first point I remember where we returned to the River was at a place Called Kelleys Orchard, a man named Kelley lived there and had an orchard there
Q Did you notice anything in particular at Kelleys Orchard as to the high water mark
A. No sir. There was a large deposit of Cobbles there & and Sand,
Q Was there any Considerable amount of sand } A. Yes
Q Did you estimate the amount of Cobbles there }
A. No sir
Q How did you make your Estimates of amounts }
A. I assumed or estimated it by eye, The distances were scaled from a map and were estimated by observing the length of time that it took to travel from point to point. The depth I assumed.
Q From what did you assume the depth } A By assuming

That the flood lines of the water was so many feet above the original bed and that where the deposit had filled up to within two or three feet of it I assumed that if the flood line was about thirty feet that the depth of water was about ten feet above the deposit and therefore I assumed twenty feet as the depth of the deposit.
Q How did you estimate the width of the stream?
A. We estimated it by eye and two or three times we measured it as near as we could with a tape line to check our estimate.
Q Have you ever been in the habit of making measurements by your eye? A. Not for the last few years sir I have not
Q. Do you know anything about measurements of short distances by the eye? A. Where one has practiced sufficiently and has a good eye I should suppose

3779

it would be very accurate
I have known instances where
it would be very accurate sir—
Very accurate.
Q Among these deposits of sand
that you saw did you see any
sediment, any slickens?
A. Not in that portion of the
Stream sir except it might
be a very thin film right
immediately by the running
water. It was yellow.
Q Where did you find slickens
A. Well sir I do not remember
where I first saw any positive
evidences of any slickens to
any Considerable extent.
Q Do you remember of any
place where you did see slickens
A. Yes.
Q Where? A. I saw an
immense quantity of it between
Folsom and Sacramento and
at some points that I do not
remember now above that
Q Did you examine the
River from Folsom to Sacramento
A. We made a hurried examination

9780

Q it sir.
Q How long were you in making
that examination?
A. We went up on horse back
One day and returned the next
Q Did you go up in the bed
of the River? A. I did not
sir. It was impossible to ride
there.
Q Did you go down to the
bed of the River?
A. We followed along the bank
as far as Sacramento bar
And we crossed there and went
over on the high land and
we followed down the bluff
bank, immediately following
the base of the hill and we
rode on down to a point as I
remember it at the El Paso ranch
below the Haggin house.
Q How did you make the
balance of the trip?
A. It was nearly night sir
And we left the River there
and I did not see it again

2. How far is that from Folsom?
A. As near as I can estimate it about 12 or 15 miles
2. How far from the City of Sacramento?
A. About 12 or 15 miles
2. From Sacramento City?
A. Yes sir
2. How far from Folsom, the same distance?
A. Somewhere I suppose, about midway, a point midway between the two places.
2. In what condition did you find the American river between the town of Folsom, commencing at the town of Folsom and the place where you left it?
A. For three or four miles below Folsom, there were sand bars on the side of the river, I would judge from three to four hundred feet wide perhaps more and as we descended the river it grew wider and meandered around

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between sand bars and beds of slickens.

Q Could you form what you say estimate the amount of sand in the stream?

A No sir there was nothing there by which I could possibly attempt to do it

Q. How did the material deposited at the town of Folsom differ from the material further down if it differed at all?

A. Near Sacramento the cobbles ceased and it was sand and slickens. Above that the bed of the river was very much sand similar to what it was above, bars of sand, clean sand apparently and cobble bars, cobble and gravel bars.

Q Did you notice whether or not the deposits gradually became lighter as you come down the stream?

A Yes sir they did

Q. How wide were the sand bars in the river at the point where you left it?

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A. Some places there taking from bank to bank what I would now call the bed, that was some places a thousand feet wide, that is the river is its various channels, and the different bars.

Q. Well, was the channel of the river filled evenly deep as it seemed to be.

Q. Or any shoals? A. It seemed to be in a great many places tolerably smooth and in others it was broken by higher bars.

Q. Did you see any thing except sand in the bed of the river

Objected to as leading.

Q. If you did see any thing else except sand I want to know what it was?

A. Well until we reached about midway as I remember between here and Folsom, we saw cobble bar and sand bar

Q. Did you see any thing else in the river?

A. There was a few colored ws which I presumed to be chickens

Q. State whether or not the filling in of the river that you speak of, the deposits in of the river was occasionally in spots or continuous from the town of Folsom down as far as you came?

A. Well, these deposits in the river were continuous and in greater & less as we approached the City of Sacramento

Q How did the river run through the deposit? A It meandered from one side to the other

Q Did you go down the bank of the river at any place to look at the banks of the present bed of the river, the low water bed?

A I was down at the edge of the water at three or four different places

Q What did you find the banks to be composed of? A Well in most places where I got to the bank, the bank was composed of cobbles and sand

Q To what depth could you see the cobbles and sand where the river was running through? To what depth could you see the cobbles and sand?

A Well where we crossed

it at the Sacramento Bar it was I think about a foot deep, I could barely perceive the larger cobbles underneath the water at that point

Q Barely perceive what?

A The cobbles in the water where we crossed it at the head of Sacramento Bar

Q But I mean how deep were the banks on either side, the banks formed by the Summer channel of the river?

A A portion of that distance the banks were very high, bluff banks 120 to 140 feet high

Q I mean the banks within the stream as I understand your description of it is that there are two high banks and that the river meanders through deposits there? A Yes sir

Q How high are the

deposits above the banks made by the meandering of the river through the deposit, the inner banks?

A From four to five feet as a rule.

Q Did you examine those banks to see whether the same material ran down through to the level of the water? A I did not sir. I merely examined them by my eye.

Q Well how did they look? A Well there were cobble bars, sand bars. It had the appearance of being pure —

Q (Interrupting) Did it seem to be cobble and sand bar clean down to the water? A To the water's edge.

Q How did you notice the bottom of the stream?

A I could not sir.

Q What was the character of the water coming down?

A It was muddy —— muddy water

Q Did you examine it closely? A I in one or two places. I took a drink of it — in one or two places on the road down

Q You drank the water? A Yes sir

Q Much sediment in it? A There was a good deal. It was tolerably fair drinking water where I tasted it just at the lower end of Sacramento Bar where we lunched; I drank a cup of water there and it compared favorably I thought at that time with Sacramento water

Q Did you notice any deposit in the bottom of the cup? A I did not for I did not keep the water up long enough to have it settle but there certainly would have been if I had kept it long enough.

Q You did not leave it there long enough? A No.

——"——

<Recess until tomorrow at 9.30 AM>

3784

In the Superior Court
of the State of California
in and for the County of
Sacramento

| | |
|---|---|
| The People of the State of California vs. The Gold Run Ditch and Mining Company | Morning Session Tuesday Dec. 6th/81 |

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Winfield J. Davis
Official Reporter

In the Superior Court
of the State of California
in and for the County of
Sacramento

The People of the State of California
vs.
The Goed Run Ditch and Mining Company

Morning Session
Tuesday
Dec. 6th/81

Cross-Examination
of
George B. Cosby

Mr. W. C. Belcher. Q. You visited the mine of the defendant on the 4th of November? A. Yes

Q. You say under the direction of the State Engineer

A. Under the direction of the State Engineer under the request as I understood it of

Attorney General Hart

2. The only examination that you made of the mine was at the pit, is I understood you correctly?  A. Yes.

2. And you assisted in the measurements?  A. No, I was present when Brusky took the measurements

2. Did you make any observation at the mine that would determine as to the character of the cement? You speak of it as hard cemented rock. Did you make any examination by which you could determine further than simply to say that it was a hard cemented rock?  A That was all

2. Did you try it with a pick or with a hammer?

A. I did not.

2. Have you been accustomed to mining?  A. No, I have not, not at all.

2. Had you previously been accustomed to making Geological surveys, or surveys of

3791

any kind, of a character like that?

A No.

Q. You saw a bank of pipe clay there or a stratum of pipe clay—one or more, perhaps two strata

A Mr. Jones pointed out to me & the eastern side —

Q. (Interg) You need not tell who pointed them out. You say there were two?

A. I say a mass of loosened clay, as I understood it to be

Q. That you saw in the pit?

A Yes. On the eastern side of the pit

Q Did you see it also in the wall and sides?

A I can not say that I did. I made no examination to ascertain any facts of that kind

Q. You saw a pine tree with its roots on one side of the pit, with its roots stripped bare of Earth? A. I saw a very large tree and the roots that were running toward the hill away from the Creek were horizontal and were bare

3792

2. Well, the other?

A. The other toward the creek was also bare. The roots seemed to be what I would call apparently, the tap roots, and it was bare four or five feet below the horizontal roots which ran into the bank.

2. Do you remember you had seen trees in that way before had you not? A Yes

2. Is it an uncommon thing along a mountain stream to find trees in such condition?

A I think not

2. Was there anything about the condition of the tree, that would indicate at what time its roots had been bared?

A. There was not. It appeared that they had been bared for a very long time. And I took it as proof that there was no very great deposit there, otherwise the roots would have been covered up.

2. You think the tree was deposed to put its roots under

ground originally, but by some cause or for some cause, it had been bared at some time, you could not tell when?

A No.

2. And as to the cause, or rather as to the time, it would be simply a matter of guess work, would it not?

A. Certainly

2. Now in the Examination below you went down Canon Creek, and there there was some instrument for measuring. You determined the height to be 1020 feet down. By what kind of an instrument was that determined?

A It was determined by an aneroid barometer

2. By a sight observation at the top?

A. No. We took the reading at the mouth of the tunnel and then when we arrived at the summit we took the reading again and upon the return to the mouth of the tunnel we took

3794

the reading again, as a check upon his former reading

2. Now do you know or did you know at the time how closely the two readings compared with one another?

A I stood right next to him. My recollection is, that the two readings at the mouth of the tunnel, varied very little if any from each other. He took only a single reading at the bed of the river

2. How far apart were those two readings? I mean now at the mouth of the tunnel?

A I should suppose they would be — Well, it was the time it took us to walk from there to the bed of the American River and back to the tunnel?

2. Probably an hour?

A. Probably more

2. Two hours perhaps?

A. Not more than that I think.

2. Now from your experience with instruments of that kind

3/95

and seeing them used would you judge that would be a fair number of observations from which to determine heights.

A Several; to make a close and fair approximation to the heights of same they are nothing but approximations with that instrument, but very close ones, provided, as I understand it, there is no Extreme change of temperature or any long interval between the times when the readings are taken

2. Had you any experience yourself in the use of the aneroid? A Very little

2 As to the accuracy of it you are not prepared to answer correctly?

A. Well, I think I am to a certain extent. I know that the instrument as I understand it is generally considered accurate, provided the observations are taken

3796 at no great interval of time perhaps a half a day - and with no Extreme change in temperature

Q Now I ask you if it is not necessary in the determination of heights with that instrument to make a series of observations before any reliable conclusion can be based on the result derived from it, and that running through a considerable time?

A To reach accuracy it would probably

Q Even approximate accuracy? Ans I think not.

Q Do you think the aneroid is as good as a mercurial barometer?

A Really I am not able to discuss the comparative merits of the two instruments

Q The aneroid depends simply upon the air does it? A Upon the pressure of the volume of air

Q Upon what? A Upon the column of the mercury

Q Upon what? A Upon

the mercury

Well now when you started down the river, the North fork, you made estimates of distance? and of quantity, your estimates of depth of sediment and quantity of deposit were rude guesses were they not?

Ans. I do not consider them guesses

Q You do not consider them guesses? Ans

Q Was it not a guess as to the height? where you saw water-worn rocks for instance? As to the height the stream may have been at some time? A I estimated that by my eye

Q I ask you if that was but a guess then?

A I do not call it a guess

Q You do not call it a guess when you estimate

by the eye? A Not for as short a distance as that or as close to it— no.

Q Did you find a bridge a trail bridge for saddle animals and foot passengers a few miles below?

A Yes I think I did

Q Did you measure the height of that bridge?

A Is that the Stevens bridge, the one you refer to?

Q That is the first bridge you come to going down stream is it not? the Stevens bridge?

A It is my recollection it is

Q How did you measure the height of that from there, either accurately or with the eye?

A I think it was measured exactly. If you will permit me to look at my notes

Q Certainly A <examining notes> I think it was about 20 feet if I remember. I have it here somewhere but do not seem to find it.

Q I wish you would find it, for I desire to know what the height of that bridge was if you have it. A <examining> 19 feet.

Q Was that an accurate measurement? A I think it was measured with a tape line

Q 19 feet above the bed of the stream? A Yes. That is what my note says

Q And do your notes say or do you remember whether it was measured or not? A I have marked it here "measured"

Q Did that bridge stand there last Winter — the Winter of 1880-81?

A I do not know whether

it did or not.

Q Was it a new bridge to appearance? Did it look as though it had been built this year?

A I do not remember

Q You do not remember about the appearance of the bridge? A No.

Q Only the fact that you saw a bridge there?

A I remember seeing a bridge there, and I remember the fact of its being measured and the height above the bed of the stream at that time

Q Did it strike you as a little curious there that there was a bridge standing there only 19 feet above the stream when you estimate high water mark to be 25 feet above? A It is my recollection that at that particular place

the high water mark was several feet below

Q Several feet below what? A Below the bridge. That is the high water mark that I have used as a reference

Q How much below the bridge was the high water mark there?

A That I do not remember exactly. I merely took occasionally

Q I wish to get at it as accurately as you can there I would like to know if the high water mark was not more than 12 or 15 feet there? I would like to know about it.

Q Do you know whether in the American, as in all the rivers coming out from the Sierra Nevada the water was higher last Winter than it had ever been before within the knowledge of

men, or Americans in building here? A I think it was very high I do not know what the relative height of that with other exceptional floods was; I do not remember

Q Then would it not have naturally been a matter of astonishment, if it had been a very high flood and you had found a bridge within what you have estimated to be the line of high water?

A That bridge was not within the line of high water; it was several feet above it I presume, as in a great portion of that river, the high water mark that I had assumed as the ordinary height of high floods was as a rule a very few feet - three or

four feet — in many places two and some times only one foot above the deposit in the river.

Q Now then did you mean to have it under stood, or is it the fact, as derived from your observation that the water last Winter which you say was an exceptional Winter in the matter of its flood only rose from the low water mark 10 feet or five feet. Is that the highest flood mark of last Winter?

A I presume not. In fact I know it was not.

Q Then in some places you say that the high water mark as you noticed it was not more than one foot above the bed of the stream?

A When I refer to that high water mark I

mean what had been the usual flood heights for many years in times past

Q Now would not that be very much a matter of pure guess work: where it had been in years' past?

A I only considered it approximate

Q It would be a very rude approximation would it not?

All about being thoroughly familiar with the heights of floods it perhaps would be

Q Now for a man to form any fair judgment of a stream and its height would it not be necessary either that he should take the judgment of those who lived along its banks, in great measure, for the determination of the facts, or else that he should have been himself personally

acquainted with them for a series of years.

A I, of course would consider his judgment much more valuable than that of a person passing hastily along for the first time

Q The height of this bridge I think you gave as 19 feet. A That is what I have it in my note

Mr Stark 19 feet from what.

A 19 feet from the bed of the river at that time

Mr Cadwalader Do you mean from the surface of the water. A Well the water was very shallow there was scarcely any difference between that and the bed of the stream. They were almost the same at that point. The bed of the stream was perfectly level and the water very shallow

Mr. Belcher The rocks which you saw in the Claim were water-worn rocks were they?

A I do not understand the question

2. I say that the rocks which you saw in the banks of the Claim or pit? You were at the mining Claim; you looked up at the banks which surrounded you, and saw the rock. Was it a water-worn rock as far as you noticed it

A. It was a cobble, and I believe they are usually considered water-worn.

2. Rounded rock?

A. Rounded rock; the edges or corners worn off.

2. Now did you examine the bed of the stream say for the first five or six miles? Did you examine the bed there to see whether the composition of the bed of the stream as you found it, was just like the rock in that pit surrounding it

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A. I visited that hill, not as a Geologist, as a mineralogist or Scientist

2. Exactly. I am asking you now simply, what it presented to your eye as you went there?

A. I do not pretend to make any comparisons whatever except in the general form of the cobbles, which are usually the same

2. If I understood you to say the wall as it stood there before you looked as if it were of rocks and gravel and sand?

A. Rocks and gravel and sand yes sir

2. What do you include in Cobbles?

A. Rounded rocks of oval form, about the size of my head perhaps a little larger.

2. Perhaps larger?

A Well, - from the size of my head down & the size of my fist

2. And if it were rounded and four times that size

3848

A. Well, I would call them small boulders in that case

2. Did you then in the claim notice small boulders as well as cobbles?. A. I think I did so

2 Then the question which I asked you was when you came down to the stream, did the bed of the stream look as if it was made up in the same way, of cobbles gravel and sand?. A. Yes

2. Consolidated or impacted?.

A. In the claim where the water was running over it, it seemed to be compacted or cemented together

2. You did not make any calculation at all, as to what was the particular substance that acted as a cement?.

A. I did not so. I made no Examination, I presume it was sand and —

2 (Repeated) You measured the width of the stream by the Eye?. A. Yes

and in two or three cases we
checked — In order to test
our accuracy we checked
them by our measurements with
a tape line.

Q You measured that way
accross? A. Measured all
except a very few feet which
we had to wade through wa-
ter in order to do

Q. You estimated the width
in most places, you estimated
the depth of the sediment, you
estimated the height of the water
over rocks, all these estimates
with few exceptions were made
with the eye? A. Yes sir

Q. And then you figured after
you had made these estimates
with the Eye, so as to get the
data for computation — then
you made your computation
on the exact basis of so many
feet? A Yes sir

Q Which would arise from
the data which you had be-
fore you? A Yes sir

Q When you got down to

the Middle Fork, did you find the water muddy coming out from the Middle Fork?

A I found the water coming from the North Fork very clear, it could be practically called clear; that from the Middle Fork was reddish yellow - muddy

2. Quite muddy or only moderately so?

A The contrast between the two waters was very marked.

2. Did you go up that Fork at all? A. We went up about two miles

2. Then you passed along down to the mouth of the South Fork? A Yes sir

2. Did you go up the South Fork? A We crossed a bridge and went up - went into the river at one or two points, two or three miles above

2. How did you notice mining claims all along from the mouth of your

Starting at Canon Creek or near that point down & the mouth of the South Fork along the banks of the river?

A We did so, at a great many points

Q. Did you make any estimate at the time you were coming down of the extent of that mining? A. I did not so, attempt to make any estimate

Q You did not make any estimate at all of the quantity? A. No sir

Q. But your eye as you passed along told you, that there has been extensive mining going on there? A. Yes, sir in a great many places

Q. Did you take a memorandum of the places and names so far as you then discovered them?

A Of a few of them sir, not of all of them

Q. In going up the Middle Fork, did you notice

mining there?. A Yes sir.
Q So far as you count about three miles. In going up the South Fork did you also find mining there, evidences of mining?.
A We crossed the bridge and then we only went into it at one point above there where we did not see any mining.
Q. What bridge did you cross at the South Fork?.
A Well sir, I do not remember the name of the bridge. It was the first bridge above the junction.
Q. A three bridge, do you remember about that?.
A I do not. I think it was sir, but I am not certain.
Q. For some distance above Folsom, if I understood you, you did not go into the river at all but rode along on the high bluffs and sometimes back some distance from the river

occasionally going in where you could look down?

A. We went into the river at several places, we went with it at the North Fork dam and we went into it at a place we called Kellys School

2. The North Fork dam is how far above Folsom?

A I can tell it by reference to my notes, I do not remember now exactly what the distance was. It was about 2½ miles below the junction of the Middle Fork

2. That is sufficient. Did you notice when you were at or near the junction of the South Fork of the river, did you look down the stream so as to form some judgment of the character of the stream for the first three quarters of a mile or a mile?

A I did it

2 When did you see about ½

that it was a comparatively
level quiet Stream there, or
that it was such having a
rapid troubled current?
A My recollection was that
it was in falls and ripples,
or it ripples I should say,
slight
2 Well, indicating that it
had a very rapid descent or
gentle? A Gentle a rapid
descent sir
2. And that in all the ex-
aminations you made of that
portion, & stand and look
down the stream for a dis-
tance of a half or three
quarters of a mile or per-
haps a mile or a mile
and a half?
A Just what I could
see from the point sir
2. That in all the exam-
inations that any of your
party made there was it
not? A. Mr. Munsey
who was with me at that
time was perhaps 100 yards above

me at the time and he afterwards, I think, passed along on foot where he kept just on the Edge of the river

Q. Did he pass down there?

A Yessir

Q Following the river?

A Yessir — At that point he did not sir. He became tired out and had to leave the river about a mile or two above that, ~~and ca~~

Q. And came down to it at the bridge and then went back following along the highlands down?

A When he was with me he did

Q. Then the judgment which you could make in regard to that distance there, was only from seeing it first standing from the bridge or at the dam and looking down the stream, for the stretch that was before you and again from the hill tops

3816 looking down into it

A. That was all the value that it had.

2. Well, I will ask you did you see a dam there, at the South Fork, or near it?

A. The North Fork dam was just below the mouth of Middle Fork, if I understood you correctly? A Yes sir

2. Now was there any dam at or near the junction of the South Fork of the river? A. I was mistaken in my reference — It was below that point that I went into it

2. It was below that point that you saw it then?

A Yes sir

2. Do you recollect where that was? A. I do not say that I saw a dam, I say it was below the dam when I did not see it

2 Did you at the time you were making that Examination, or did any of your party so far as you know

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See any dam between the mouth of the South Fork and Folsom? 2. A. No sir

2. Now from Folsom down did you make any particular observation of the extent of the mining along the banks of the river?

A I made such observation sir as we would in riding as close to the bes of the river as we could on our horses just below Alder Creek we had great difficulty in getting them along on account of the mining

2. When you were passing over a district that had been mined.

A Yes sir

2. At Alder Creek?

A Yes sir

2. Did you make any estimate there of the extent of the mining? A. I did not attempt to do so

2 You did not attempt to

A Except that it was very extensive

2. You were riding with Mr. Brusky at that time?
A Yes sir
2 Did Mr. Brusky attempt to make any estimate of the Extent of mining there?
A I do not know sir whether he did or not
2 Well, you would have known if he had, would you not? A. I probably would
2. If he had made any measurement, if he had made an estimate with his eye you would have been very likely to have spoken of it together if you were riding together, would you not?
A I can not say sir what he would do.
2 at any rate you made none yourself?
A I made none myself no sir
2. You did not make any estimate then of the Extent of the mining or the amount of earth that had been moved

7819

at any place except the mine of the defendants?

A. What is that?

2 Q. Say, you did not make any estimate of the amount of earth that had been moved & mined along the whole course of the river from its mouth there at Sacramento up to Onion Creek except at the mine of the defendants - you made no estimates?

A. I did not see

2. You simply saw that there had been extensive mining along the whole length of the river? A. At various points, some small, and some a very great extent

2. But it was pretty nearly continuous was it not from Sacramento up to Folsom on one side or the other of the river? A. From the point where I first got into the American River going up, it was almost continuous from there up

Q And above Folsom from there up to the mouth of Canon Creek the mining bars were frequent? A Yessir
Q Both low and high?
A Yessir
Q. Had you any acquaintance with the early mining in this State? A I have not, sir

Re-Examination
Of
George B. Cosby

Mr. Hart Did you see a mine in operation between Sacramento and Folsom?
A. Yessir, below Alder Creek I think it was, I saw them throwing water through a pipe against the bank on the left bank of the river below Folsom.
Q. What kind of pipe was that? A Well, it was a small pipe four or
3821 five feet long apparently,

I was within about 30 or 40 yards of it and it appeared to be two or three inches in diameter at the nozzle, at the end through which the water was passing against the bank.

Q. It appeared to be two or three inches in diameter?

A. Yes sir.

Q. Did you see any other mining operation between there and there? A. That is the only one I saw.

Q. Where was that, above the stream or immediately in the stream, in the bank within the bank?

A. It was about I should think three or four hundred yards back from the bank of the river.

Q. Did you see where that mine was dumping tailings?

A. Yes sir, they had a flume or sluice running from where the bank was being caved down out into the bed of the river.

Q. Did you notice the water above and below where that was being done?

A. Yes sir

Q. Did you notice any difference

A. I did not sir

Q. Well do you know enough about mining to say whether or not, that was mining on a slight or an extensive scale?

A. I would call it very slight sir in comparison with the large hydraulic mines

Q. Did you see any large hydraulic mines between here and Gold Run? A. No sir, not in operation.

Q. Did you see any mining comparing in size with the Gold Run not in operation?

A. No sir

Q. Did you see any in operation between Folsom and Gold Run? A. No sir

Q. Now this bridge that you spoke of first this morning on your Cross-Examination that you measured the hight of, state whether or not

3823

beneath that bridge there appeared to be any deposit

A There was.

Q. Well, did you measure from the bottom of the stream, the original bed of the stream or the deposit?

A I measured from the top of the deposit to the floor of the bridge — I did not measure it, Mr. Brumley did I think.

Q. What did you estimate to be the depth of the deposit at that place?

A In that reach of the river I estimated it to be 20 feet.

Q. You spoke a moment ago of the variance between the high water mark at different points, didn't you?

A Yes; I referred to the difference between the top of the deposit and the high water mark, what I meant by the variation.

Q. Did you notice whether or not the high water mark

was higher from the river bed at some points than others

A Yes sir

Objected to as not re-examination

The Court. There is no objection to Explaining anything that has been made obscure by the cross-examination

Mr Hart. I want him to explain about the variance — State the reason why this variance existed, if any, you noticed in the bed of the stream — I ask the depth from the original bed of the river to high water mark not from the deposits

A What is that?

Q State the reason why this variance existed if any you noticed in the bed of the stream?

A. I stated that the difference in light between the bed of the stream as I found it and the water line the water mark which I assume as the light of the ordinary floods in the

3820

river, varied. And that depends on the amount of filling that has taken place at those points

2. I am speaking now whether or not there is any variance between the light of the water mark at different points from the original bed of the river without reference to filling?

A. Yes sir, I state I think that in what we call Rocky Canon, the canon just below Rees Bridge, which is a gorge with vertical sides and very narrow, that the height there was very much higher than it was in points in the river where the channel was broader.

2. Well now, at these points where it was not so high what did you notice to be the character of the channel?

A. The channel of the river was wider, there was more space, more water-way there

2. How was the channel of the river at the point

Where you saw this bridge as to width?  A. The width of the river between the towers of that bridge was 108 feet, I have it in my notes, the river was wider I think about 150 feet just below it — the river bed.

Q. The river bed was 150 feet?

A. I think so, about that just below the bridge

Mr. Hart. What was the character of the stream there, that is the fall in the river, the general character?

Mr. Belcher. That he gave in his direct Examination

A. The bed there as I remember it was as it was above and below smooth as a floor and I think I said that I estimated the grade of the river there to be some 40 feet to the mile

Q. You were asked on cross-Examination whether or not you went directly to the bed of the river, at all points

Where you made your estimates

Mr Belcher. I object to that

Mr Hart. Now, I want to know why you did not go to the bed of the river at such points as those mentioned by you & Mr. Belcher in his Cross-Examination

Mr Belcher. I interpose the objection that it is simply going over the same ground.

The Court. I think he has already stated

Mr Hart. I did not Examine him about that

The Court. He stated why he did not go

Mr Hart. I will ask you that one or two Cross-Examination this question; at the point where you did not go over that above or below the South Fork of the American River

Mr Belcher. That he has already stated also, it was both above and below.

3828 Mr Hart. Was it above

below the Middle Fork.

A. From Cañon Creek, from Middle Fork we followed every loop of the way in the bed of the river.

Q. Is or is not that the distance through which you have given your estimate?

A. Yes sir.

Objected to as leading

Recross Examination of

Leo B. Crosby

Mr. Belcher. Did you mean to say to the Attorney General that you went following the bed of the stream all the way from the Middle Fork

Mr. Hart. From Cañon Creek to the Middle Fork?

A. Correct that with the exception of about a mile and a half through a very rocky canon just below Rice Bridge. With that Exception we followed immediately in the bed of the stream. I should have stated that to the General

# Re direct Examination of George B. Cosby

Mr Hart Q I will ask you why you did not go through that rocky Cañon

Mr Belcher She stated why not in direct examination

The Court I think he did. I think that is enough on that. We all understand it A I did not make any statement in regard to that

The Court You will find on direct examination he did make such a statement

Mr Hart I will make an affidavit that I did not ask him any such question I simply asked him to make a general statement which he made in very general terms. The Court refuses to permit me to examine him upon that?

The Court Yes sir

Cx

Mr Starr I will take an
exception to the ruling of
the Court

Mr Belcher A question
that I omitted to ask you

Mr Starr I object to it

Mr Belcher We can call
him for ourselves hereafter.

Testimony
of
John St Roberts
Called for plff sworn.

Mr Sturt What is your occupation? A Steamboating
Q How long have you been steamboating? A Since May 1876 — wood boating previously from 1853.
Q What kind of boating?
A Wood boating
Q What rivers have you navigated? A The Sacramento and Feather Rivers
Q To what extent have you navigated the Sacramento river? A To Mackintosh's landing or from Mackintosh's to San Francisco
Q Where is Mackintosh landing? A It is just about on the direct North line of Colusa County on the Sacramento River
Q Through what portion

of the river did you first navigate? A From Knight's Landing to Sacramento

Q When was that?

A From 1853 to 1857

Q When did you first go up the river from San Francisco to Sacramento and North? A In 1866

Q Was that your first trip up the river? Answer I had been up on other steamboats as a passenger and observation and on business

Q When did you first do that? A In 1854

Q How frequently were your trips up and down the Sacramento River from 1854 to 1866?

A Three times a month

Q What kind of a river was the Sacramento River between Sacramento and San Francisco when you first knew it? A It

was a deep navigable
stream

Q When did you first
know it? A In 1866

Q You first knew it in
1866? A That is my
first experience in steam
boating

Q But when did you
first know the river?

A In 1854 I went down
on the "New World"

Q Where did you settle
in 1850 when you came
to the State? A I came
to Nevada City in the
Fall of 1850

Q You say the river
was a deep navigable
stream in 1866? A Yes sir.

Q What kind of water
was it carrying at that
time? A Well it was
muddy water

Q Did you ever see the
river when it was not
muddy — the Sacramento?

A Yes sir I saw it in

the Summer 1851

Q What was it Character then? A Clear

Q How long did it remain clear? A Well in 1854 it commenced to be muddy

Q Do you remember what the character of the mud was that came down in 1854 — the color?

A It was a light sediment like what we call light chickens

Q What was its color?

A Reddish

Q What is the color of the river between the City of Sacramento and Fremont & the mouth of Feather River when you first knew it? A It was a clear stream

Q How about its navigability?

A Navigable with the exception of two bars, the Russian Crossing and Fremont Bar

Q You say it was

navigable with the exception of those two bars, what do you mean by that? A Well those shoaled - the river is very wide there

Q Could they run up the stream? A Well they had no trouble with the exception of those two bars that is all

Q Well could you go over those bars at all? A Well we had some difficulty boats did

Q Could you get over them at all? A Yes sir

Q Then was it navigable? A Yes sir

Q Where were those bars located? A Russian Crossing about 10 miles above the City here

Q And the other place? A 23 miles

Q That is Fremont bar? A Yes sir

Q How deep was the

balance of the river?

A From 12 to 20 feet at low water

Q Do you know anything about the depth of the river below the City of Sacramento during that time? Ayes sir

Q Well what was its character? A A deep stream

Q How deep? A With the exception of Stags Back and Stay Cock Shoal it was from 12 to 30 feet deep.

Q From 12 to 30 feet?

Ayes sir

Q How deep was it at the Stags Back and Stay Cocks Shoals? A At low water it was 7 feet at low tide

Q How deep at high tide?

A About 12

Q What kind of steam boats navigated the river between Sacramento and San Francisco at

that time? A Deep water

Q Well what do you mean by deep water steamers? A Propellers and side wheel steamers

Q Carrying or drawing what depth of water? A From 7 to 11 feet

Q Do you remember the names of any of those steamers? A The Stanford, a propeller, is one; the Martin White, a propeller; the Steamer Goliah a heavy side wheel steamer; the Steamer Senator, a heavy steamer. The Wilson G Stunt, Confidence and the New World

Q What is the designation of that kind of steamers are they ocean steamers or inland steamers?

<Objected to as leading>

The Court What kind of steamers were they?

A Sea going steamers

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and River steamers

Mr Hart. Q Which ones were sea going steamers if you remember their names?

A The Senator and New World and Goliah

Q How long did those kinds of steamers continue to navigate the Sacramento between Sacramento and San Francisco?

A Well I should think until 1871 - they were hauled off about 1871

Q What kind of steamers have navigated the river since that time?

A Light draft.

Q What do you mean by light draft steamers?

A Well flat bottomed, low pressure steamers some side wheel and others stern wheel

Q Do you know the names of any of those steamers - it is not material - why was this change

First-spotted land

made in the character of the boats that navigated the Sacramento River?

A Necessary in order to carry freight and passengers

Q Do you remember when it became necessary

A About 10 years ago about

Q Why was it necessary?

A There was not water enough in the river to run deep water boats

Q Well what is it that made the change in the character of the river, its navigability?

A Filling up with sand

Q When did you first notice that? A In the Fall of 1854 making a trip to Marysville

Q In 1854? A Yes sir in the Feather River

Q You first noticed it on Feather River? A Yes sir

Q When did you first

1840

notice it in the Sacramento River ? A In 1868

Q Will you what did you notice at that time ?

A The Stuyvesant shoals 10 miles below the City, that began to give some trouble ? Steamboat Slough shoaling up on the Point side

Q Now give the reason why it began to give trouble A It narrowed the channel

Q What narrowed the channel ? A The sand shoaled up all the point sides, the reaches

Q Sand ? A Yes sir

Q To what depth did you notice sand in 1868 in the Sacramento River on Stuyvesant shoals bay or any other place that you can think of ?

A I noticed it perceptibly filling up every year

Q Well say in 1868

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4 – 5 feet at Hay creek in 1868

how much did you notice
if you remember at the
time of this obstruction
at Stuycocks shoals
that you have spoken
of? A I should judge
it had filled up 4 or
5 feet at that time
Q What was the character
of the sand that filled
the river at that place?
A Grey sand inter
mixed with red stickens
Q Have you ever seen any
of the same kind of mater
ial about Sacramento?
A Yes sir
Q Where? A Hauled into
the streets filling up.
Q Did you ever see any
in any of the rivers near
Sacramento? A Yes sir
Q Where? A Above
the Sacramento bridge
Q What point? A From
the Pioneer Mill up to
the mouth of the American
where the American

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empties in at the present time

Q The same general character is it? A Yes sir.

Q Now what portion of the Sacramento River was originally navigated at or near what is known as Steamboat slough?

A Originally it was navigated through Steamboat slough in preference to Old River

Q Why was that?

A Deeper water, shorter cut

Q When did they cease navigating through Steamboat slough? A About 10 years ago, large steamers.

Q Well do they navigate through that slough with small steamers now?

A They coming up

Q What was the reason of the cessation of large steamers navigating the

slough there? A Filling up and narrowing the channel

O What water? A Water sand

O When did you notice that, any material change in Steamboat slough?

A Since 1871 - 72

O What portion of the river do they navigate now?

A Old River

O What is the condition of Old River at that point as compared with its formerself at the point where they navigated Steamboat slough?

A It has not changed to so much an extent as Steamboat slough

O Is it changed any?

Ayes sir

O What has been the nature of the change there?

A. It has shoaled up on the Point sides on all the reaches - all the

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point sides

Q Has that affected navigation any? Yes sir

Q How? A Narrowed the limit, the scope, the room

Q Well in any other way? A In depth

Q Has it made it deeper or less depth? A Less with the exception of where there was a bar originally down at the lower end of Old River.

Q How much shallower is it now than it was originally at this point where it has narrowed — where the channel is narrowed

A 10 or 12 feet

Q Filled up to that extent? A Yes sir

Q Have you ever particularly noticed at that point the character of the material that fills the river? A It is similar to other parts, it has

been washed down closer, harder pand in the bottom – more black sand

Q In the bottom?

A yes sir

Q On the sides how is it? A Slickens

Q Do you know about how deep the slickens are on the sides there? A There is no means of determining there are small portions left standing there on the banks about 3 or 4 feet deep to top of the Natural soil

Q How is this filling of the sluices at that point and other points between here and there progressed how has it been done?

A Progressed how?

Q Gradually or all at once? A Gradually

Q State you observed the filling each year?

A yes sir

Q About how much has it deposited each year

since 1871 or 1872 when you first began to notice it?
A I should judge a foot every year
Q A foot every year? Ayes
Q Did you notice whether it had filled up any last year? Ayes sir
Q How much? A Oh some places we have to change the course running in the river. It is filling up perceptibly every year. I cannot tell I never measured it
Q Can you give any instance of difficult navigation of the river since this filling up has commenced? Ayes sir
Q Well name one?
A A boat drawing 4 feet of water going through Steamboat Slough would have to be shoved down in several places to keep her steady and finally had to abandon

going through Steamboat Slough going down towing two barges of grain

Q Was that your own boat? A yes sir

Q What is the name of your boat? A The Steamer San Joaquin

Q Was that a large or a very small boat? A That is the original boat we had and then the San Joaquin No. 2. a larger boat

Q The San Joaquin No 2 is a larger boat? A yes

Q The original one was what? A a small boat

Q How much does the San Joaquin No. 2. draw?

A 4 feet loaded

Q How much did the San Joaquin No. 1.?

A 3½ feet

Q Would it be possible for you to navig ate down the stream through Steam boat slough with your

boat now, that is in Summer time? A Not safe

Q Why is it unsafe?

A No room

Q How far up the river has this filling that you spoke of continued?

A On the Sacramento to Fremont

Q From where? From Steamboat Slough? A From Rio Vista; at one point from Rio Vista up to Fremont on the Sacramento River

Q That is where the Feather River puts into the Sacramento?

A yes sir

Q About what is the average depth of filling above the original bed of the river? A Above what point?

Q Between those points

A From Rio Vista up to Fremont 12 feet

Q Has the fill in the river had any other

No difference in Sand as go
down river

effect than the raising of the bed, that is any effect other than reducing the depth? A Yes sir

Q What has it been?

A Narrowed the width

Q Narrowed the width and reduced the depth both? A Yes sir

Q Is that true only in spots or continuously?

A Continuously.

Q What have you noticed with reference to the comparative quality of the material from Sacramento down whether it is the same or differing in character? A I can see no difference it is fine's the further you go down

Q Is that true with reference to sand or sediment or both? A Both

Q Where do you find the bars on the river between here and Rio Vista?

A The first above Rio Vista is opposite New Town Landing or perhaps 400 yards above; about opposite where the old town of Rio Vista used to be. Coming up Old River the head of the first island then all the reaches on the Point sides all filled up all along.

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Q. Well, what kind of formations are those sand bars?
What do you find there?
any thing growing on them?
A. What?
Q. Do you find any thing growing on the sand bars?
A. Where they are out of water, cottonwoods and willows
Q. Any thing else?
A. Nothing to speak of
Q. Have you noticed the ground between the headlands of Suisun Bay? A. Yes. On the east side
Q. Where, at what point on the Sacramento River or near there?
A. Suisun Bay is filled in between Mud Slough and Stake Point, or between the headland
Q. What is that filled with?
A. Sand and shells
Q. To what depth?
A. Ten & twenty feet deep in places
Q. Is there any sediment there? A. Shells

on top and sand underneath
2. What is the color of the
Shiken there? a Red
2 Have you noticed along
the point at Benicia where
the Pacific Mail Steamships
used to lie? a That is
shoaled up
2 To what extent?
a Twelve or fifteen feet
2. What is that earth? of what
material? a Mud
2. Any sand
Mr Belcher. Let him state
what it is
Mr Hart. Well, what is it
A It is Shiken and such
stuff as comes down the river
2. What is the color of the
sediment there? a Reddish
2. In that part of the
country do you find any soil
of that kind other than such
as comes down the river?
a Do you mean on the land
or in the water.
2 On the land?
a It is principally adobe

down there

2 Black or red?

A Dark black, and brownish color; brown and black

2. What do you mean by brown?

A Drab color

2. You spoke of some Steamers that ran up the river, Cargo Steamers. What depth of water do they draw?

A From seven to eleven feet

2. At what stage of the water could they navigate the river in Early days?

A A low stage

2 Would it be possible for a Steamer drawing Eleven feet of water, to navigate the Sacramento River now at any point between here and Benicia

A Not at low water

2. What would you say was the number of feet that the bed of the Sacramento river has been raised between here and Steamboat Slough?

A Twelve to fifteen feet

2. Do you know of any

Artificial means that have been adopted to keep the river from filling up entirely there?

A. Yes.

Q. What is it?

A. Wing dams.

Q. Any thing else?

A. Not that I know of.

Q. What effect have the levees on either side of the river had upon that?

A. I do not know as it has had any effect.

Q. You do not know that it has?

A. No.

Q. How high does the water rise with reference to the natural banks and the levees in high water times?

A. It rises over the banks and levees too.

Q. It rises over the banks and levees, too? A. Yes.

Q. What difference would it make in the height of the water there, if there were no levees before the water went over the banks

and spread out into the tule,
A. It would make the difference that it would come on a level: the tule water and the river water
Q. Would that make any difference in the height of the water, running in the channel of the river during high water time, to take the trees out
A Yes.
Q. How much?
A I am not able to say, I never measured it and am an Engineer
Q. Do you know whether or not the height of the water, increases or decreases the running capacity of the river?
A What is that question?
Q Do you know whether or not the height of the water increases or decreased the current of the river, I will say? A You mean to say the depth of the water
Q Yes A Yes
Q You know of what Ex

but it increases it?
A Well, I could not say Exactly — No.
Q. According to the filling that has been going on in the bed of the Sacramento river how long will it take to Entirely destroy the Navigability of the Sacramento River
Mr. Belcher. We object that the question is hypothetical and that this witness has not shown himself competent to answer as an Expert
Mr. Hart It is a mere matter of mathematical Calculation I suppose
Mr. Belcher. Well, if it is The Court can make it. And we would rather The Court should than the witness
Mr. Hart. I doubt the competency of the witness and will withdraw the question. How high were the banks of the river the average banks of the river between here and
856 Steamboat Slough when you

first knew the river, above the bottom, or low water mark I will say?

A I should judge 18 feet.

2. The average depth from the top of the bank to low water mark?

A. Yes

2 How high is the average depth at this time, from the top of the original bank to the low water mark at this point?

A. 6 feet I should think

2. Have you made any Special or other observations during your residence here and from experience as a boatman, as to the amount of water, the comparative amount of water now required to produce a flood, as compared with the amount necessary in 1850 — 1854 — when you first knew the river

Mr Belcher. Answer the question without stating the results you have arrived at

The Court. I suppose by a

flood you mean an overflow
Mr Hart. Jessie, an overflow
A. I want to understand
what you mean by a flood
2. An overflow.
A. Do you mean water coming
over the levees
2 Yes, over the banks
A Over the levees?
2 Yes, over the banks
Mr Beleher. The counsel asks
you now simply whether you
have made an observation,
that is all.
A Well, what I know by
Experience — Is that observation?
Mr Hart. Yes.
A It takes considerable less
rain to bring water over the
levees than it used to
2. Now in saying that do
you take into consideration
the levees that have been constructed since you first knew the
river? A. The levees
at the present time, the pre-
sent system of levees, I
mean. It does not take

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much rain & brings the water over the levees

2. How much higher are the levees now, than the original banks of the river? That is to say, how high have they been constructed above the original banks of the river? A From 4 to 9 feet

2. How much freight did you company bring down the Sacramento River in 1876?

A That season we brought down 45,000 tons of wheat

2 What relation do you bear to the Company?

A. Secretary and stockholder

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Cross-Examination

of

John H. Roberts

Mr Belcher How early did you say you were in Sacramento?

A The latter part of May 1851.

2. Had you prior to that time been accustomed to steam-boating?
A No.
2. Or water craft of any kind?
A No
2. What was your first visit to California?
A. What do you say?
2. That was your first coming to California?
A No.
2 When did you come?
A The fall of 1850
2 But you did not come to Sacramento?
A. No.
2 Did you go to Nevada?
A I came from Bear Valley to Sacramento in May 1851
2 But your first settlement was in Nevada County at Bear Valley?
A At Bear Valley - yes
2. A miner?
A Yes
2. Do you know what is the low water mark of 1849 upon the gauge of this City?
A No.
2. You do not know anything about it?

A. I never took notice of it particularly

Q. Not up to this day?

A. Why, I have taken notice of the gauge and seen it. But I was not here when they put it down in 1849. When they put the mark down I was not in the Country.

Q. Do you know the difference between the low water mark of 1849 and the low water mark of 1881 at the gauge in Port City? That is a simple question; you can say yes or no.

A. No, I do not know it.

Q. Not even approximately?

A. I know what I have seen here since I have been in the country

Q. That is all? A. Yes

Q. Did ever you make the matter of hydraulics or Engineering in any of its departments a study?

A. No.

Q. You are a Captain of one of the boats of the Lac-

ramento Wood Company are
you?. A. I have been
at times; occasionally, and
yet if necessary.
2. That is an occupation
Employment?.
A Well, at the present time.
I used to navigate about
altogether until the last three
or four years. I have been
on the boats though all the
time, every week during that
time but not at the wheel
2 Before that you were
pilot as well as Captain?.
A Yes.
2 Running from here up the
river or down the river? or
both?. A. Both
2. You can up you say to
Mac Intosh Landing?.
A. Of late years
2 Earlier did you run still
higher up the river?. A No.
2 That is the highest to
which you have run?.
A I have been up as far as
Squaw Hill with a boat

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That is 66 miles above Mac. Intosh?

2. Mac Intosh is on the Capay Rancho is it, nearly opposite Chico?

A. No. It is nearly opposite Nord, just above Colby Ferry

2. That is a little way above Chico, or a considerable distance above Chico. That is above Washes Place, a little above Walsh's Place?

A Yes.

2. About what distance up the Sacramento is that from this City following the river?

A. By the road 275 miles

2 That is by the river is it?

A Yes

2 What did you say that was by? A By the road. That is the distances

2. That is your road of distances up and down the river?

A Yes

2. How many miles is that above the mouth of Stony Creek

A By land or river?

Q By river? A. 25 miles

Q and about how far by land? A. About 8 miles

Q From the time you leave the mouth of Stony Creek is the west bank of the river lined pretty much all the way down to this City?

A From the mouth of Stony Creek down?

Q From the mouth of Stony Creek. Say from Jacinto which is a little way below Mr. Cadwaladers No? Take it from Stony Creek

Mr Belcher Very good. No objection. Stony Creek.

A. Well from what I could see on the river navigating on the river, it is not lined until you get about 8 miles below Jacinto.

Q Eight miles below Jacinto?

A From what I could see on the river going up and down on boat

Q. Did you know Bowles

Slough? A. I know of such a Slough.

Q Do you know where it is or where it was?

A Well, I have an idea where it is, but it was never pointed out to me that particular Slough. I know there are several large sloughs there

Q. Did you ever see above Jacinto a large slough, 100 or more feet in width by 15 feet in depth?

Mr. Cadwalader. We call the attention of The Court to the circumstance that this is part of the case of the defense more than ours. Here are 250 miles of river which Mr. Belcher proposes to go into topographically and hydrographically. We suggest that it is part of the defendants case

The Court. I do not see what bearing that has. It may be very well a part of their case and nevertheless proper

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Cross-examination

Mr. Cadwalader. But it did not come out in our case at all

The Court. That is another matter

Mr. Cadwalader. That is what I mean. We had nothing to do with the river above Fremont

Mr. Belcher. I think it a very proper matter for cross-examination, following the course which Plaintiff have taken. Counsel for Plaintiff have shown by their witness that here at Sacramento a very much less amount of storm will produce an overflow of the banks of the river than would have been necessary in the earlier years. Now I think I can show by this witness that the very work that has been done along the banks of the river from the mouth of Stony Creek down to Sacramento would, if those levees held, not only

raise it two feet but six feet and perhaps more than that here

Mr. Hart. The levees?

Mr Belcher. Yes sir

Mr Hart. What has Bowmen sloyd to do with that?

Mr Belcher. Because it is filled up and is a part of the system of levees. That was an open way, an outlet, letting a large body of water out into a deep reservoir which held it, and so preserved the lower country.

The Court. You are explaining the fact which the witness testified to, of the increased tendency to high water here

Mr Belcher. Yes sir

Mr. Hart. But we did not understand by the witness to give any reason for that

Mr. Belcher. When they state facts we think we can give reasons

Mr. Hart. We think the cross examination of the witness as

of other witnesses should be confined to determining the truth of what he has testified to

The Court. Oh no! that can not always be the test

Mr Hart. It should be the test in all cases where the cross-examination is confined to legitimate cross-examination. I understand the we put a witness on the stand for the purpose of proving a fact. The object of cross-examination is to determine or not whether the witness has stated that fact correctly; and if he has stated the fact correctly they may go beyond that and ascertain if there is not something more connected with the immediate fact But they cannot in cross-Examination as to the existence of a fact undertake to determine from the witness what is the reason of that fact, that constituting a different subject of Examination. We proved two facts by the witness.

First, that the bed of the river is filled up; Second, that it requires less water to require an overflow than it did before. Now I do not think that authorizes the defense to go above and ascertain whether there are levees there which cause an overflow here.

The Court. Of course I suppose the limit of cross examination must be largely a matter of discretion. In this particular matter as counsel very well states, the ground of the claim seems to render this testimony directly relevant to the same subject; that is, the increased testimony to overflows created by the filling up of the river - and it seems to me it seems to be legitimate if there seems to be any other cause for that, and then of course it seems to be legitimate cross examination to show that there is another cause

Mr Cadwalader. I do not un-

Understand Mr. Belcher to put it on that ground
The Court. I understand it to be precisely that—
Mr Belcher Yes sir
Mr. Hart. I am perfectly willing for Mr. Belcher to ask whether the levee system contributes to the raising of the river. But what I object to is this going into an examination concerning Bowmes Slough and other places up there which may require a great deal of testimony on our part to explain
The Court. I can see that it will open a very extensive field. But it seems to me it is relevant to the subject matter testified to by the witness; and if he knows another cause I can not restrict the examination. I think I will have to allow it
Mr. Hart. We except to the opinion of the Court.

Ex

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Q And how high are the banks? A From the low water?

A Yes. I should judge they were from 10 to 12 feet

Mr Cadwalader One moment. I deem it proper to state that if this matter comes into our case it will make it necessary for us to call some 40 or 50 witnesses from the banks of the Paramento

The Court That does not make any difference if it is admissible

Mr Cadwalader I want to simply notify the Court of that circumstance.

The Court The Court has nothing to do with that.

Mr Belcher Q The lower Sycamore slough below Knight's Landing you have seen very frequently, I suppose? A Yes

Q What was the width of that before it was filled?

A Where it comes out of the Sacramento?

Q Where it puts out from the river?

A I should judge it was 100 feet wide

Q And its width at the bottom? A At low water?

Q Yes. A I never measured it but it is a deep slough. I should judge it was 12 feet deep at low water. That is in low water the depth of the water is about 12 feet I should judge. I never measured it; I have swum across it

Q I am not asking about the depth of the water but the width at the bottom - the distance across it would gradually taper; I should say it would be 60 feet in the bottom I should judge; I never measured it

Q Now do you know the upper Sycamore slough or did you before it was banked up there?

A Yes

Q How wide was that at the top? A I never measured it

Q You never measured this? I want to get at now your approximate measurement. How wide was that? approximately to the best of your judgment?

A 40 feet

Q And its depth or width at the bottom rather as it originally was?

A I should think it would be about 11 feet.

Q And its depth?

A About 15 feet.

Q And Butte slough which puts out on the other side of the ~~water~~ river a little above, how wide is that and what is its depth?

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A I never noticed one as large as that

Q How large? A There are four or five sloughs

Q I am now talking about one which is larger than any other if there is such a one there?

A There is one big slough

Q I think that is about 9 miles? And it is below

Q Well I was not certain as to that A It is below about 8 miles. There is one big slough there; I do not know what they call it

Q No matter what they call it. Approximately how large was it? It is on Dr Flemis place is it?

A Yes. It is 40 feet wide I should think

Q How wide? A 40 feet at the top and about 20 feet at the bottom

Q How deep? A About 12 feet I should think

Mr Belcher Q For how many years have you been sailing up the river as high as Macdintosh's or Jacinto, taking either point? A Since 1873 that is above Jacinto

Q And up to Jacinto? A Since 1868

Q Now during that time below Jacinto did you notice on the West bank of the river? Do you know where Bournes lives? Do you know a man by that name there?

A I know a man by the name of Bournes Bicknell, a farmer back of Butte City. That is on the East side of the river that he lives

Q But on the West side did you notice a large slough putting out from the river 100 and more feet in width by 20 feet in depth from the banks?

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A At high water or low water stage?

Q Have you seen it frequently in high and low water? A Yes

Q What was the width there from bank to bank?

A In low water?

Q At the top. I do not care whether it was low water or high.

Mr Cadwalader Fix the time

Mr Belcher I take it, it does not make much difference. What was the width at the top?

A I should judge 80 feet

Q And the width at bottom? A 60 feet

Q And the depth?

A At high water or low water?

Q From low water to the top of the bank, or from the bottom of the channel which you say was sixty feet wide?

Q Now from the bottom of that — you may take it either from the bank at the bottom or from low water mark — to the level of the bank above?

A I should think it, to take the whole depth, about 18 feet

Q Do you mean from low water mark or the bottom? A Down to the mud and clear up to the top of the bank

Mr Hart Is that where it runs in from the river?

A I would qualify that By the top of the bank I mean on a level with the top of the Sacramento river bank. The slough recedes or the banks, recede as they run into the tules back from the river

Mr Belcher I mean the bank right on the edge of the river

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A It was about 18 feet
They are in natural
alignment with the
bank of the river
Q And that was the
basis of your estimate
of distances in respect
to each of the others was
it not? A Yes.
Q Now do you know any
thing about the amount
of land which was in
the Colusa and Yolo
basins above Knights'
Landing, embracing
the basin which was in
high water always filled
with water prior to the
building of the levees
Mr Chadwick We ob-
ject to that as not on
cross examination. It
is calling for an ex
amination as to a water
shed of 2500 square
miles, to which we made
no allusion whatever in
our opening, and it will

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require new Witnesses, being a new subject.

Mr Belcher I think the Court sees the pertinency of the question

The Court Proceed. It is the same thing

Mr Belcher Do you know the extent of that basin prior to the building of levees or approximately

A only from observation

Q well from observation how far, say starting from Knights Landing up the country, did it go?

Mr Stark Is this on the Colusa side?

Mr Belcher On the Colusa side

A The back water came up about 3 miles above Colusa I should judge

Q a distance along the river of how much?

A well I mean in the

basin the tule basin back.

Q I understand you. But I say, a distance from Knights landing how far, how many miles?

A By land or river?

Q You may take it by land A well I should judge it backs up in that low basin —

Mr Hart <cuts> You mean in the slough there?

A yes, or in the basin or Hog wallow of the Valley

Q There is no tule there?

A No tule there

Mr Belcher Q You mean no tule weeds growing there? A No tule weeds growing there. To, two or three miles above Colusa

Q That would be how many miles to Knights Landing northward?

A I do not know the distance. I should judge it to be twenty five miles

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in a straight line as the crow flies, as the paying is

Q Take it as the crow flies, you think it would be 25 miles? A yes

Q Do you know the township, I mean now the government township, so as to get the exact distance? Ans I never looked on the map

Q What would be the average width of that when filled with water? Take it last Winter or as it would have been last Winter if there had been no levees to keep the water out?

Mr Hart You are assuming, Mr Belcher, that there are levees to keep the water out, and I object to the question on that ground

Mr Belcher Q Were there any levees along the

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banks of the Sacramento River to the town of Princeton during last Winter?

A yes

Q A continuous levee from the town of Knight's Landing to the town of Colusa? A yes

Q Was it broken anywhere?

A yes.

Q Where? A too numerous to mention

Q Between the town of Colusa and Knight's Landing? A yes too numerous to mention

Q You may mention one.

A On the West side?

Q On the West side

A It has broken at Dolan's ranch below Colusa, the old O'Keefe ranch, Tolson's ranch, opposite Meridian and Byer's ranch

Q And it was broken above Colusa also was it?

A above Colusa also yes

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Q Did the levee or the works constructed at the opening of the lower Sycamore Slough into the Sacramento give way, or did that remain intact?

Mr Hart I think that this examination is becoming too minute. There is one question here which is probably a very material one; but this minute examination as to those levees can give no information to the Court. If the water that formerly ran into this river out of that basin now remains in the river up there and that has any effect on the rise at Rio Vista let them prove that fact But Mr Belcher knows, I know and every Witness knows that that is not so, but that

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those basins fill up on each side every Winter

The Court You say you have those measurements if I understand you, exactly Mr Belcher?

Mr Belcher I am not now asking the Witness as to the measurements of those basins but I am asking him the width of the lower openings because he had given the measurements of the upper openings at a less figure than I thought it was

Mr Wadwalader We renew our objection made a short time ago; which was that Mr Belcher assumed that this particular plan was open. Now his question is to show that it remained closed

The Court The first question was withdrawn

Mr Wadwalader No sir it

was answered. And my objection was that the Counsel assumed that it was open.

The Court I understood Counsel distinctly to withdraw it. The Witness will answer the question

< The question is read by the Reporter >

Mr Cadwalader At what time?

Mr Belcher Last Winter.

Mr Cadwalader Let that be added to the question then A As near as I could see from the boat going up the river, in the vicinity of Stuyvesant Landing it was not frozen but they had to open the gates of the sluices to let the water out of the basins to keep it from going over the levee

Mr Sturt From the inside?

A From the inside into the

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river

Mr Belcher Now answer the former question which I asked you: What is the average width of that basin filled at high water?

Mr Leadwalader We object to that as irrelevant

<Objection overruled>

A At high stage of water I should say it extends from —

The Court <suits> Q What is the average width?

A Three to seven miles wide

Mr Belcher Q And about what depth if you know?

A In the middle of the tules it is 16 feet deep

Q What would you say would be a fair average depth taking the entire body? A I should judge the first six miles of Knights Landing in the tules it is 12 feet

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deep. From that up to Colusa it is from 2 to 6 feet deep

Mr Hart That is including the bed of the slough there? Or all the depressions

Q There is a slough there you know running through the center?

A I mean in the tule outside the slough, on each side, in the basin, what they call the basin I was over there in a boat once, a steamboat in high water and it was about 12 or 15 feet deep

Mr Belcher Q That was 1862 you were there in the steamboat?

A 1867

Q In the Winter of 1867-8

A I think so

Q There were steamboats went in there in both those Winters were there not?

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A At different times bouts went in there after stock

Q Now in 1872 Counsel on the other side stated that levees were built Do you know about that; whether a levee was built along the West bank of the river from the town of Knights Land ing up?

Mr Caldwalader. We object to it as not cross examination

< Objection overruled >

A I do not recollect exactly what year I know that A. St. Rose and Company built a levee from Knights Landing up to Sycamore Slough

Q To and including Upper Sycamore Slough?

A Yes.

Q Then the others very presently built a levee connecting with that; built on up the river and above

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the town of Colusa
Well in attached
places.
Mr Leadwalader Q At
what places?
A I recollect of their
building levees be-
tween Sycamore Slough
and Colusa. I carried
material up there
for them: Scrapers
and hay and feed
and such things and
got some of their scrip

Q. You know then, as to the fact that the levee has been built along the west bank of the river from Princeton down to Knights Landing, do you not?

A. Yes sir, there are some breaks - some exceptions where it has not been built -

Q. That was where the bank was so high as not to need it? A. I could not say about that -

Q. Where the exceptions?

A. Well, if I am not mistaken it is between Selfensteins' and what is called the Hastings' Ranch, along in there, I think there is no levee there for a small space, there was not any the fore part of last Winter

Q. That is, above Colusa, is it not? A. Yes sir

Q. At or near what is called Hamiltons' Ranch?

A. Between Hamiltons and Selfensteins, I should

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think there was a small section they had not finished, they had not got quite through

Q. They had not got quite finished? A Yes, sir

Q. There had been a levee there before, had there not?

A. Well, there might have been a very small levee thrown up

Q. Do you know whether there was — are you speaking now from certain knowledge, or is it a mere matter of conjecture?

A. There had been a small levee thrown up

Q. Have you been able to form any judgment, or from your best judgment can you now tell us whether the height of water in the river was in any way effected, we will say from the head of Butte Slough down the river, by reason of

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those levees on the bank, the west bank

Mr Hart. I object to any testimony as to increasing the height of the river bed at any point north of the entrance of the American River into the Sacramento, on the ground that it is not cross-examination, and relates to a subject that he was not examined about in chief, and on the further ground that it is irrelevant and immaterial to this case

The Court. I suppose it might be pertinent to ask him whether the quantity of sand that was brought in the highest flood is effected by those levees.

Mr Hart. I am willing that question shall be asked in that form. I will not object to it.

Mr Belcher. One question first; if within a given

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stretch of the river, there had been no embankments on it, and the water had been of a certain height, and embankments are built on one side of the river, what is the height of the water then? Now here, at this city there were no embankments in 1852 and '53, upon the one side or the other of the river

Mr Hart Do you want to make an expert of this witness?

Mr Belcher In 1880 and '81 there were embankments on both sides of the river, what effect did those have?

Mr Hart That is not cross-examination

Mr Belcher I will withdraw the question, and will ask you, have you noticed, or did you notice whether or not the water was higher subsequent to the building of that levee

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than it had ever been before — at any point below the head of Upper Sycamore Slough?

Mr Hart — We make the same objection, that the testimony is irrelevant and immaterial, and secondly that it is not cross-examination.

The Court — (after argument) I will overrule the objection. Note and exception.

(E & E)

Mr Belcher — Have you noticed, or did you notice whether or not the water was higher subsequent to the building of that levee than it ever had been before, at any point below the head of the Upper Sycamore Slough. To make it definite, we will say at Eddys' Landing.

Mr Hart — I object to the question as being indefinite unless you say Eddies' Landing, in Colusa County.

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Mr Belcher - Eddies' Landing in Colusa County?

The Court - I make the same objection that I made to the other question. The Court overrules the objection, and I except -

(Ex)

A. At Eddies Landing?

Mr Belcher At Eddies' Landing? A. The water has been higher than before the levees were built. Since the levees have been built they are higher

2. At the same stage of water above, would it be higher or lower - has it been higher or lower at Eddies'

Mr Hart - We object to that as not being cross-examination, and as making an expert of this witness, as to the effect of constructing levees

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Mr Belcher I am not asking him about the effect, I am asking him what

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(4)

he has seen.

The objection is overruled, and plaintiff excepts

A. The sand up the river, where there are no levees.

Mr Belcher Just the same stage taking it up to 1862 or at any time when you knew the river, and at a given stage of the water, and then take a time, subsequent to the building of the levees, at the same stage of water in the upper river, did you notice any increase in the height at Eddies' Landing, or at any point below the mouth or head—

The Court Have you observed any? A. Yes sir

Mr Belcher What was it? A. Making the same trip from Sacramento up to Cobbis' Landing I have noticed the water higher, at Eddies

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Landing and in that vicinity in proportion from the levees confining it than it would have been under the same circumstances, where there was no levee

Q. How much?

A. Well I have seen it to very near the floor of the warehouse

Q. How many feet?

A. About 5 feet

Q. Now in 1881, at what time did any of those levees ~~that you~~ at the point you have spoken of, or at any points along that river, at what time did they give way? A. In the month of February

Q. After the highest water? A. During the highest water, during the flood

The Court In February, 1862?

A. 1881. Last Feb-

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ruary

Mr Belcher What effect if any was produced upon the river and the heights of the water in it, by the giving way of the levees?

A. The easement, the lowering of the water in the immediate vacinity of the levees

The Court State what you saw, not what you suppose would be the effect?

A. Well, I have observed one place in particular below Calusa, if you want to know that, it ran over on the east side of the river several miles from Butte Slough to Calusa, and that eased Calusa from being overflowed, and then below Meredian.

The last answer is objected to, and motion made to strike it out as not responsive

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Mr Belcher I do not object to the last answer being stricken out, relative to easing Calusa from being overflowed

2. Did you sail up the river in 1862, or at any time during the Winter of 1861 and 1862, during the highest waters in that winter?

A. Yes sir

2. Or in the Winter of 1867 and 1868?

A. Yes sir

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Q. In both winters A. Yes Sir
Q. What were the bloods of these winters in the Sacramento River as compared to the blood of 1881, say above Freemont
A. The blood of 1861 and '62 I would consider the biggest blood since that time
Q. You considered that as being the biggest blood of all
A. Since that time yes Sir
Q. The one of 1867 and 68 approaching it how nearly, as to the high water mark
A. That is altogether owing to locality
Q. I have stated the locality. I said from Freemont up
A. 1868, if I recollect, on the account of the levees holding the water -
The Court - He did not ask you that, he asks about the heighth.
A. It is just owing to circumstances about that, it was on account of the levees holding the water

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Mr Beecher - Here's what I want to get at now; we record the height of bloods: we say in 1862 we had a very high flood and in 1852 and '53 we had a high flood. In 1867 and '68 the river was high, also in 1880 and '81 it was also high: and now I want to get at some comparison of those, the one with the other without reference to an embankment at all, because there are parts of the river where there are no embankments, how would they compare with one another. If 1862 was the highest did that of 1867 and '68 come within a foot or six inches of it, where there were no embankments and nothing to control it.

A. In 1868 would not compare with 1861 and 62

Q. How near approximately that is all we expect

A. On the general lines on the scale you mean

Q. I do not care about the

tule, how much water was there coming down the river before we came to the tules in the Sacramento River

The Court - Above the Feather

Mr Belcher - Above the Feather, and above the opening cut into those low lands

A. Well I do not Know. I got scared in 1868 if you want to know, here and they rung the alarm bells.

The Court - He wants to know the relative heights of the floods of 1862 and of 1867 and '68 in the upper Sacramento

A. Well there is a material difference. I should judge it was one third less any how on an Average

Mr Belcher - When you say a foot less do you mean a foot or two feet or three feet or brick bat in height?

A. Well I should judge it was a small flood in comparison to what 1861 and '62

was I cant tell exactly but it was not a circumstance to 1861 and '62

Q. The one of 1867 and '68 was not a no fir

Q. It was not a circumstance in regard to the height of the water?

A. The whole raining season put together

Q. I am not talking about the whole raining season because we all remember the boat who remember the flood of 1861 and '62 that it continued for months while that of 1867 and '68 was short, but you may have a flood that will continue but one day And come up to a water level that would be equal to the other water level that continued for months. Now I want to know about the water or the height of the water in those two floods comparatively

The Court - At the highest stage

A. Right here between the levees is the highest.

Mr Belcher. That is not where I was talking to you about it

A. I should judge it was not so high by five or six feet on an average.

Q. That is up at Jacinto and above there where they had no levees?

A Well I mean down here in the tules.

Q. Well I am not asking you down here at all at this present moment

The Court - If you do not know say so.

A. Well I do not recollect I was not up there in 1868

Recess until 2 o'clock

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